

DOES THE ARMY HAVE AN EFFECTIVE DOCTRINE FOR THE CONDUCT OF REAR AREA SECURITY AND THE PROTECTION OF SUPPORT TROOPS?

**A MONOGRAPH
BY
Major Ernest A. Szabo
Armor**



19970506 040

**School of Advanced Military Studies
United States Army Command and General Staff
College
Fort Leavenworth, Kansas**

First Term AY 96-97

DTIC QUALITY INSPECTED 3

Approved for Public Release Distribution is Unlimited

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 9 December 1996	3. REPORT TYPE AND DATES COVERED MONOGRAPH		
4. TITLE AND SUBTITLE Does The Army Have an Effective Doctrine for the Conduct of Rear Area Security and the Protection of Support Troops?			5. FUNDING NUMBERS	
6. AUTHOR(S) Major Ernest A. Szabo				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) School of Advanced Military Studies Command and General Staff College Fort Leavenworth, Kansas 66027			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Command and General Staff College Fort Leavenworth, Kansas 66027			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION/AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE: DISTRIBUTION UNLIMITED.			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) This monograph examines US Army doctrine for the conduct of Area Security. It concludes that current doctrine is ineffective and should be changed to prevent needless casualties in future conflicts. The monograph examines the threat to US forces across the spectrum of conflict from MOOTW to High Intensity Conflict. It determines that the most likely threat to US forces will be small groups of light infantry operating against US Combat Support and Combat Service Support units. Next the monograph examines the current doctrine for conducting area security. It determines that the doctrine is inadequate in that it does not provide for building the required combat power to defeat the expected threat. The doctrine does not provide adequate mobility, firepower, protection or leadership to either the support units, the response forces or the tactical combat force. The monograph suggests possible methods of correcting these deficiencies. These methods include properly resourcing support units so that they can defend themselves and forming a dedicated Area Security Force. The Area Security Force would provide a single organization and chain of command to replace both the MP units which form the level II response force and the TCF which is the level III response force.				
14. SUBJECT TERMS			15. NUMBER OF PAGES	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED	

ABSTRACT

Does The Army Have an Effective Doctrine for the Conduct of Rear Area Security and the Protection of Support Troops? by MAJ Ernest A. Szabo, USA 47 pages.

This monograph discusses US Army doctrine for the conduct of Area Security. It concludes that current doctrine is ineffective and should be changed to prevent needless casualties in future conflicts. The monograph begins by examining the threat to US forces across the spectrum of conflict from MOOTW to High Intensity Conflict. It determines that the most likely threat is not provided by a mechanized Soviet/Iraqi style enemy. The most likely threat to US forces will be small groups of light infantry operating against US Combat Support and Combat Service Support units. It argues that this has been the most common threat since WW II and is likely to be the most common threat in the future.

Next the monograph examines the current doctrine for conducting area security to protect the Combat Support and Combat Service Support Units. It determines that the doctrine is inadequate in that it does not provide for building the required combat power to defeat the expected threat. The monograph finds that despite the demise of the Soviet threat, rear operations are still given subordinate status to the close and deep fight. The doctrine does not provide adequate mobility, firepower, protection or leadership to either the support units, the response forces or the tactical combat force.

Last, the monograph suggests possible methods of correcting these deficiencies. These methods include first properly resourcing support units so that they can defeat a level I threat by themselves. Next the monograph discusses forming a dedicated Area Security Force to support the CS and CSS units as they conduct rear operations. The Area Security Force would be a combined arms organization that is analogous to a Cavalry Regiment. The Area Security Force would provide a single organization and chain of command to replace both the MP units which form the level II response force and the TCF which is the level III response force.

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Major Ernest A. Szabo

Title of Monograph: Does the Army Have an Effective Doctrine
for the Conduct of Rear Area Security and
the Protection of Support Troops?

Approved by:

Larry Githerman Monograph Director
COL Larry Githerman, MS

Danny M. Davis Director, School of
COL Danny M. Davis, MA, MMAS Advanced Military
Studies

Philip J. Brookes Director, Graduate
Philip J. Brookes, Ph.D. Degree Program

Accepted this 20th Day of December 1996

Does The Army Have an Effective Doctrine for the Conduct of Rear Area
Security and the Protection of Support Troops?

A Monograph
by
Major Ernest A. Szabo
Armor

School of Advanced Military Studies
United States Army Command And General Staff College
Fort Leavenworth, Kansas

First Term

ABSTRACT

Does The Army Have an Effective Doctrine for the Conduct of Rear Area Security and the Protection of Support Troops? by MAJ Ernest A. Szabo, USA 47 pages.

This monograph discusses US Army doctrine for the conduct of Area Security. It concludes that current doctrine is ineffective and should be changed to prevent needless casualties in future conflicts. The monograph begins by examining the threat to US forces across the spectrum of conflict from MOOTW to High Intensity Conflict. It determines that the most likely threat is not provided by a mechanized Soviet/Iraqi style enemy. The most likely threat to US forces will be small groups of light infantry operating against US Combat Support and Combat Service Support units. It argues that this has been the most common threat since WW II and is likely to be the most common threat in the future.

Next the monograph examines the current doctrine for conducting area security to protect the Combat Support and Combat Service Support Units. It determines that the doctrine is inadequate in that it does not provide for building the required combat power to defeat the expected threat. The monograph finds that despite the demise of the Soviet threat, rear operations are still given subordinate status to the close and deep fight. The doctrine does not provide adequate mobility, firepower, protection or leadership to either the support units, the response forces or the tactical combat force.

Last, the monograph suggests possible methods of correcting these deficiencies. These methods include first properly resourcing support units so that they can defeat a level I threat by themselves. Next the monograph discusses forming a dedicated Area Security Force to support the CS and CSS units as they conduct rear operations. The Area Security Force would be a combined arms organization that is analogous to a Cavalry Regiment. The Area Security Force would provide a single organization and chain of command to replace both the MP units which form the level II response force and the TCF which is the level III response force.

CONTENTS

Introduction	1
What is the Threat?	3
1) MOOTW	
snipers	
mines	
2) LIC	
3) Mid to High Intensity Conflict	
4) How Are These Three Related In Their Effect On CS and CSS Units?	
What is the Current US Doctrinal Response to this Threat?	14
1) Published Doctrine, Levels I, II, and III	
a. Overall Doctrine	
b. Level I	
c. Level II	
d. Level III	
2) What Units Are Doing Now - AARs and Operations	28
a. Recent Operations	
b. CALL Observations	
What Should be the Doctrine?	36
1) Level I	
2) Level II and III	
Conclusion	45
End Notes	48
Bibliography	57
Appendix	68

FINAL DRAFT

INTRODUCTION

*"You know you never defeated us on the battlefield," said the American Colonel to the North Vietnamese Colonel, "that may be so," he replied, "but it is also irrelevant"'*¹

In "On Strategy," Harry Summers used this quote to illustrate the difficulty of using an inappropriate doctrine against an uncooperative enemy. Despite an immense technological and materiel superiority, the U.S. was ultimately defeated by an enemy who avoided our strengths and attacked our weaknesses. Is this haunting conversation from our recent past likely to be repeated in our near future? Does the Army have an effective doctrine to defeat its enemies across the spectrum² of conflict from Military Operations Other Than War(MOOTW) to High Intensity Conflict? As the Army accentuates its strengths of technical and materiel superiority, is it leaving weaknesses that can be exploited by an enemy who refuses to fight our kind of war? Will future enemies, who cannot contend with our close combat forces, target support units as a means of weakening the combat forces and eroding American political resolve? If this occurs, does the Army have an effective doctrine for conducting area security and protecting support units?

The Army develops doctrine to defeat its most dangerous opponents. It must also have a doctrine that will defeat its most likely opponents. Operation Desert Storm appeared to validate our doctrine against a dangerous modernized opponent. Step by step, as though Colonel Summers' book was being used for a checklist, the Army avoided the mistakes of Vietnam.³ Since Desert Storm, the Army has embarked on its Force XXI[™] journey. The Army is working diligently to develop systems to find and strike the

enemy ever deeper in his own rear area. Leveraging information technology, the Army hopes to prevent a mechanized enemy from ever massing in the close fight against US forces.⁴

Despite the success of Desert Storm and the promise of Force XXI, the US Army does not have an effective, comprehensive doctrine for conducting area security. The Army has honed and polished its doctrine for the deep and close battle in each successive version of FM 100-5, yet it has neglected its doctrine for the rear area.⁵ The doctrine leaves support units vulnerable to attack by light infantry forces operating in small groups across a dispersed non-linear battlefield. This is the most common type of threat the Army has encountered since W.W.II and is likely to encounter in the near future.⁶

To correct this situation the Army must first ensure that it properly resources support units so they can execute in practice theories stated in doctrine. They must have the people, weapons, equipment and peacetime training opportunities to prepare for defending themselves in combat. Second, the Army must reconsider how it responds to threats that are greater than the ability of support units to defeat by themselves. The Army should train and equip dedicated security forces to function as the Level II and III response forces. The Army should employ these forces in a manner consistent with combined arms doctrine to seize the initiative from the enemy rather than react to the enemy's initiatives. The Army must view area security or rear area operations as a fundamental precursor to close and deep operations rather than an auxiliary effort.

This monograph will look at area security across the spectrum of conflict from MOOTW to High Intensity Conflict. Within this broad topic it will focus the security of

Combat Support(CS) and Combat Service Support(CSS) units. These support units normally operate in what the Army calls the rear area. However, there will often be situations without a clearly defined rear area. Therefore this monograph will define area security as applying to the protection of support units(CS and CSS) that are operating outside the boundaries and protection of subordinate combat units. Although the research draws from all levels of support units, the monograph will attempt to focus on the Corps rear area and Corps support units. It is these units that will most often find themselves deployed as the main effort in a MOOTW. They will also be furthest from any source of aid in a Low Intensity Conflict(LIC) or rear area combat situation in Mid Intensity Conflict. The monograph will further focus on only those threats that are posed by belligerents actually in the US area of operations. Therefore it will not address the threats from long range artillery, ballistic missiles or high performance aircraft.

What is the Threat?

There is a common threat to U.S. forces that exists across the spectrum of conflict. This threat has been present in almost every conflict and has inflicted an increasingly greater share of U.S. casualties in each successive conflict.⁷ This is the threat from light infantry forces operating in the rear area against Combat Support and Combat Service Support troops. These enemy forces avoid the close fight where the U.S. strengths of firepower and technology give our combat forces a tremendous advantage. Instead they attack U.S. weaknesses which include over reliance on extensive logistic support, over specialization by support forces that leave them unprepared for combat,

over reliance on firepower at the expense of individual combat skills and the perceived extremely low tolerance for casualties of U.S. political leadership. By dispersing into small units the enemy makes himself difficult to detect and target. This negates the overwhelming firepower of U.S. forces. As light infantry he can quickly disperse and leave more ponderous U.S. operations striking into thin air. Simultaneously, he strikes at rear areas denying logistic support to the close and deep fight. This also allows the enemy to inflict damage out of all proportion to his losses. The lack of results from close and deep operations coupled with steadily mounting attrition in the rear causes the U.S. to become frustrated and lose stomach for the fight

1) MILITARY OPERATIONS OTHER THAN WAR(MOOTW)

Despite the lack of a declared enemy, there are many dangers to U.S. forces in MOOTW. These dangers range from simple banditry to war lords whose power bases are threatened by U.S. stability or support operations. These actors will attack U.S. support troops to gain resources or make political statements. Any time that U.S. soldiers deploy to another country they will be seen by some members of the population as hostile or vulnerable.⁸ The tactical threat in MOOTW can vary widely, from unarmed mobs in Haiti or groups of armed soldiers turned to banditry as in Somalia to mechanized forces with artillery and air support as in Bosnia. The belligerents may understand the U.S. need to use restraint in responding to threats. These belligerents will attempt to provoke U.S. soldiers into over reacting to gain a political advantage. They may often intermingle with non-combatants when engaging U.S. forces.⁹ They do this in the hope of inhibiting

return fire, or if it comes, that it will kill some of the non-combatants. This "act of brutality" will be blamed on the U.S. and be useful for propaganda purposes.¹⁰

Snipers

One of the most common threats in MOOTW will be snipers. Bosnia and Somalia operations demonstrated the ability of random sniping to destabilize the situation and make it very difficult to conduct operations. Snipers may be highly trained personnel with precision weapons, targeting specific individuals and equipment in support of political objectives. They are more likely to be common soldiers armed with whatever is handy, shooting at anything not marked with the insignia of their faction. A common tactic is the establishment of "sniper alley" type situations, where the belligerents attempt to wear down the morale of peacekeeping units by keeping Main Supply Routes(MSR) under continuous harassing fire.¹¹ A unit that receives sniper fire while on foot or in unarmored trucks has no choice but to return fire or withdraw. If it returns fire, it risks collateral damage, fratricide or escalating the situation. If it does not return fire, it risks the lives of its soldiers.

Mines

In Bosnia and Somalia the threat posed by land mines has been more lethal than snipers. Both areas had extremely large numbers of mines buried throughout the area of operations. The threat to dismounted soldiers can be minimized by clearing and securing work areas and other places soldiers walk. It is much more difficult to protect vehicles. It is extremely difficult to keep roads clear of land mines. Even when routes have been cleared, the belligerents have often returned and re-mined the supposedly cleared route.

Paving roads has been shown to significantly cut down on mining incidents, but there have been cases of mines placed on paved roads as well.¹² The mines used in these conflicts have generally been non-metallic blast mines which are very difficult to detect. Although they are unlikely to destroy a Main Battle Tank(MBT), they do destroy lighter(under 20 tons) tracked vehicles and unprotected wheeled vehicles. Any detection efforts that do work must be performed at walking speed or slower.¹³ While it is impossible with current technology to keep routes clear of mines, it is possible to design vehicles to survive the detonation of very large blast mines without serious injury to the occupants of the vehicle. The South African and Zimbabwe armies do not attempt to keep the roads clear of mines but move their soldiers in vehicles that will survive what they feel are inevitable mine detonations.¹⁴

Although not as common in MOOTW as it is in LIC or RACO, ambushes and raids are tactics used by bandits and belligerents in MOOTW. In areas where there are large amounts weapons available such as Somalia, ambushes and raids will be more common. The section on LIC will discuss ambushes and raids in more depth.

Due to the threats posed by MOOTW, troops deployed on these operations need to possess the ability to move about the operational area while protected from sudden and random attacks by bullets and other small missiles. This means constructing fighting and working positions for use when dismounted or stationary and having protected vehicles when moving. These vehicles need to provide enough protection so that even if disabled or destroyed by a mine the crew survives. Lastly the soldiers need to possess weapons

that are sufficiently powerful to overmatch the light infantry weapons of the belligerents while also being precise enough to avoid fratricide and excessive collateral damage.

2) LOW INTENSITY CONFLICT

Low Intensity Conflict(LIC) is a second area that poses a high threat to support troops. LIC represents a particular bandwidth in the spectrum of conflict from peace to high intensity war. Because it is often difficult to distinguish between the less violent stages of LIC and MOOTW, this section will discuss only LIC that has moved into guerrilla warfare. Guerrilla warfare is a set of Tactics, Techniques and Procedures used by an armed force when it's enemy has occupied its territory and it cannot defeat that enemy in pitched battle.

Support units are particularly vulnerable to the doctrine of guerrilla warfare. This doctrine is to avoid the enemy's strength and strike where the enemy is weak. The guerrilla avoids enemy combat forces and attacks support troops and civilian targets. By constant small attacks, the guerrilla forces harries and wears away the stronger force. The guerrilla is willing to accept small victories since he cannot win large ones. Although not decisive, this strategy is effective because it allows the guerrilla force to continue in existence until a more favorable moment arrives. Except in rare cases, the guerrilla is willing to use the civilian population as a weapon, as a target and as a tool to strike at their enemy. By blending in with the population and encouraging or forcing them to provide support and labor, the guerrillas make it extremely difficult for conventional forces to target or attack them.¹⁵ Mao is often quoted as saying that the

people are to the guerrilla as the sea is to the fish. They provide food, shelter, the ability to move about in the presence of the enemy.¹⁶

This method of warfare poses particularly difficult challenges for rear area troops. There is no front line behind which they are relatively safe. They cannot clear large areas of the enemy because the enemy could be any one in the local population. If they take strong actions to restrict the population as an anti-guerrilla measure, they risk alienating the people and driving them into the hands of the guerrillas. If they do nothing, they are seen as weak and powerless, and invite attack. Support troops may be attacked at any time and any location. They must observe 360 degree protection, 24 hours a day.

The method of actual attack by the guerrillas is much the same as in MOOTW. The guerrilla forces use mines, snipers, ambushes and raids to strike at support and combat units that are exposed or unprepared for combat. Guerrilla forces are much more likely to conduct ambushes. The ambush is one of the most effective tactical techniques and is uniquely suited to the guerrilla. It combines the advantages of both the offense and the defense. Like the offense, the ambush retains the initiative. The ambush force picks the time and place of the attack and has the option of declining battle. Like the defense, the ambush force can select and prepare the terrain before the battle. Whereas the guerrilla may not have the strength to attack the enemy's base camps, the enemy must move along the roads to supply himself. These roads deliver the enemy's support units into the hands of the guerrilla. The ambush force fires from stationary, covered and concealed positions at an exposed, moving enemy. The ambush force can withdraw from the battle at the time of their choosing after have destroyed the enemy or simply inflicted

damage on him. This allows small guerrilla forces to attack larger more powerful enemy units without fear of decisive battle.¹⁷

The ambush force normally destroys the lead and or trail vehicle in a convoy with mines and then attacks the entire length of the convoy with automatic weapons fire, and occasionally with mortars and light anti-tank rockets. The ambush force may seek to destroy an entire convoy and capture prisoners and equipment or it may only seek to inflict casualties and flee before the arrival of reaction forces. Countering ambushes requires a two pronged approach. There must first be a highly mobile reaction force to come to the aid of any attacked convoy. Second, convoys themselves must have the weapons, radios and other equipment to defend themselves until help arrives. These two precautions will also serve to defeat raids against fixed bases.¹⁸

Combat Support and Combat Service Support troops who face guerrilla warfare will have to possess three self defense capabilities. Their bases and convoys will have to be able to defeat sudden attacks by small light infantry forces and resist larger forces until a response force arrives. This time may vary from 15 minutes to an hour or more. Second, most if not all of their vehicles should be able to absorb mine blasts without killing the crew or passengers. Last, at least some of their vehicles must have the ability to absorb common attacks (mine blasts, snipers and bursts of automatic weapons fire) and continue the mission.

3) REAR AREA COMBAT OPERATIONS DURING MID TO HIGH INTENSITY CONFLICT

The threat to the rear area during mid to high intensity conflict has become relatively much greater in the last few years. This is because of the huge combat power

differential between the US and any likely opponent. Future opponents will be unable to engage in successful close combat with the Army. They are much more likely to avoid close combat and strike at the rear areas which remain vulnerable.

With the demise of the Soviet threat and the lack of a near term peer opponent, the threat to U.S. close battle forces has dramatically declined. The threat to close combat forces has declined because no other nation or alliance has developed the weapons and equipment to provide it the combat power that is comparable to the US. There are some nations which have produced individual weapons which are technologically equivalent to US weapons. However these nations have not integrated their weapons into the "complex adaptive system" possessed by the US.¹⁹ The US close combat systems such as the M1A1 M109A6 and AH-64 each possess multiple leap ahead technologies,²⁰ which give them a tremendous advantage over potential threat equipment. The US also possess many capabilities that most other countries do not possess at all, such as JSTARS, counter fire radars, low observable aircraft and satellite imagery, navigation and communications. More important than distinct weapons capabilities, is the synergistic effect achieved when they are employed in concert with one another to strike an enemy throughout the depth of the battlefield. While many nations possess large stocks of older weapons and a few technologically advanced weapons, no other nation or coalition has developed the complex adaptive system required to conduct the simultaneous close fight and joint deep attack practiced by the US in Desert Storm. Any nation or alliance that attempts to fight the U.S. in a traditional mechanized battle risks suffering the same fate as Iraq. The near term benefits of the Force XXITm initiatives will

only add to the overmatch. General Depuy made famous the phrase "what can be seen can be hit and what can be hit can be killed."²¹ The U.S. military possesses an overwhelming ability to see, hit and kill that will be unmatched by anyone in the world for the next twenty years.

However, few countries will be foolish enough to conduct a war by our terms. They will not fight the Soviet style breakthrough offensive and conveniently mass for the US deep and close fight to destroy. A competent enemy will avoid US strengths and will refuse to mass his forces.²² He will disperse so as not to present a lucrative target. He will negate US technological and materiel advantages by hiding in close terrain especially cities where US sensors cannot see him and US weapons cannot effectively kill him. He will attack US weaknesses which include our reliance on a heavy flow of support, our reluctance to accept casualties and the low level of combat equipment and training of our support troops.

The utility of striking an enemy's rear when you lack the combat power to defeat him in the close fight has already been demonstrated in the Korean War and on the Eastern Front in WW II.²³ Current US forces are highly vulnerable to similar strategy. The doctrine for the close and deep battle is predicated on uninterrupted flow of huge amounts of fuel, ammunition and repair parts. Infantry, Armor and Field Artillery Battalions require daily resupply convoys of fuel and ammunition. The Forward Support Battalions that provide these supplies depend upon daily resupply from Division which in turn requires daily resupply from Corps support units. These requirements combined

with maintenance and medical evacuations add up to a huge volume of wheeled vehicle traffic along Lines of Communication(LOCs).²⁴

The enemy must be expected to have just as much common sense as we do. Because he has relatively limited resources, he will attempt to strike those targets which have the greatest effect on the U.S. war effort. He will analyze our forces based on the vulnerability, criticality and recoupability of each U.S. system and organization.²⁵ His preferred targets will be easy to destroy, critical to the U.S. effort and difficult to repair or replace. He will hesitate to attack tanks and other fighting vehicles because, as individual vehicles, they are not a critical assets, they are very difficult to destroy, and even if knocked out, can often be repaired(recouped). He will instead attack the fuel and ammunition supply units which support the combat units. They have almost no self defense capability, their thin fuel tanks and glass truck cabs are very vulnerable. They are critical assets since killing a few trucks will take a great many tanks or other fighting vehicles out of the fight.²⁶ They are totally un-recoupable since once the fuel or ammunition is ignited, they will burn down to the engine block and axles.

In the U.S. military, it is often assumed that to conduct deep attacks requires sophisticated sensors and long range precision weapons. However, poor countries can still fight the deep battle. A technologically backward nation might rely on human intelligence to identify critical U.S. assets in the rear area. Once the appropriate high value targets are identified, the enemy might again use people rather than technology to conduct deep strikes.²⁷ Small units of light infantry who own no radios are very difficult to find with JSTARS, UAVs, Guardrail Common Sensor or Multi-spectral satellite

imagery. If they dress like civilians and hide their weapons then they will blend in to the normal population, and be impossible to identify. Their Target Selection Standards will not be measured in timeliness or location accuracy but by the criticality, vulnerability, recoupability standard. Like the guerrilla force in the previous section, they do not need to win quickly. While the U.S. seeks a battle of annihilation, they will wage a war of attrition one, fuel tanker or MSE Radio Access Unit(RAU) at a time.

4) HOW ARE THESE THREE RELATED IN THEIR EFFECT ON CS AND CSS UNITS?

Across the spectrum of conflict, the most likely threat to US forces will be an enemy who disperses to avoid US combat power and then attacks non combat forces with his own light infantry in company strength or smaller. US troops whether they are in support units or combat units, will seldom face enemy tanks but will encounter land mines on a daily basis. After land mines, the next greatest threat will be bullets fired by snipers and ambush. The enemy will disperse so that we cannot find and hit him with our deep attacks. He will mass the minimal combat force to strike and then quickly disperse, often without pressing home his advantage, in order to avoid US reaction. The enemy will select his targets based on their vulnerability, recoupability and criticality to the US effort. He will attempt to create a "crisis of perception"²⁸ as US combat forces appear impotent to protect logistics forces from apparently random violence.

The most vulnerable areas will be the LOCs and the forces moving on them. While even small, poorly equipped units can do much to protect themselves when stationary, it is much more difficult when moving. Stationary support units can gain protection by digging in and preparing the engagement areas around their position.

Moving units are exposed on the roads and do not know where the engagement area will be. The enemy will use not only the terrain but the local population to provide cover and concealment. When the enemy uses the population as a shield, US forces must be careful that their response to the attack uses the minimum force needed to defeat the threat. If the support units and reaction forces respond too violently, they will jeopardize the legitimacy of their cause by killing civilians.²⁹

What is the current U.S. Doctrinal response to this threat?

Despite the end of the cold war, US doctrine for rear operations is still heavily weighted towards fighting a numerically superior, mechanized foe. It assumes that the close threat is so great that no combat forces will be available to secure the rear area. It requires support units to defend themselves while sustaining the combat forces. Further, it fails to provide the forces, resources or training to accomplish this self defense mission. It perpetuates the concept of the rear area fight as an ad hoc supporting effort that only becomes worthy of attention when it begins to disrupt operations at the front. It does not follow the principles of war, the tenets of Army Operations or other Army doctrine.

1) WHAT IS PUBLISHED - FMS, MTPS, MTOES AT LEVEL I, II AND III

a. Overall doctrine

The Army does not have a single over arching FM that deals with rear area combat operations. FM 90-14 "Rear Battle", printed in 1985 has been rescinded and not replaced.³⁰ The term "Rear Battle" itself is no longer used and has been replaced by "Rear Operations".³¹ The doctrine for rear area combat operations is now found spread

throughout chapters and appendices in manuals FM 71-100, "Division operations", FM 100-15 "Corps Operations" and FM 100-16 "Army Operational Support". These manuals address "Rear Operations" rather than "Rear Battle" but define it in much the same way as: "those actions taken by all units to secure the force, neutralize or defeat enemy operations in the rear area, and ensure freedom of action in deep and close operations."³² The bottom line for both terms is the retention of freedom of action for close and deep operations. Thus Rear Operations are firmly established as a supporting effort. The newer manuals also retain the concept of bases and base clusters and three tiered threat/response framework of the older manual. One significant change is while the old FM discussed the levels based on the size and tactics of the threat, the new FMs address the levels based on the response required to defeat the threat. The rescinded FM 90-14 defined threat level I as enemy agents, saboteurs and terrorists. Threat level II were diversionary and sabotage operations conducted by small units. Level III threats were of battalion size and larger.³³ The new FM defines the threat as follows:

Level I threats are those that can be defeated by base or base cluster self-defense measures.

Level II threats are beyond base or base cluster self-defense capabilities but can be defeated by response forces, normally military police with supporting fires.

Level III threats necessitate the command decision to commit a combined arms tactical combat force to defeat them.³⁴

The doctrine states that all rear area units will form themselves into geographic bases to provide mutual self defense. Bases will then form themselves into base clusters to provide further self defense and organize local reaction forces. Bases and base clusters are expected to provide their own security and defend themselves against threats such as

those listed under the old threat level I and against small unit attacks(old threat level II) within the limits of their ability. If they cannot defeat the attacking threat they will then call on the response force represented by MPs and sometimes Corps Engineer units if available. If the level II response force cannot defeat the threat then they report this to higher and the rear area operations center makes the decision to request commitment of the TCF.³⁵

b. Level I Doctrine:

The concept of bases and base clusters is basically sound. However, there is one area in which the published doctrine is weak. The MTOEs of CS and CSS units do not provide the personnel or the equipment to adequately execute the missions prescribed in the FMs and MTPs. CS and CSS units require all of the elements of combat power if they are to conduct combat actions. They require firepower, protection, mobility and leadership. They also require sufficient personnel to perform security tasks while accomplishing their support or sustainment mission. Analysis of five MTOEs of typical CS and CSS company sized units shows that they do not possess the resources needed to generate the combat power required for level I self defense.³⁶

Firepower

For firepower, support units possessed personal weapons and some machine guns. None possessed anti-tank weapons, mortars, fire support or ready access to fire support. Few had the more effective automatic weapons such as the MK 19 40mm automatic grenade launcher or the M2 Heavy machine gun. Only those units that did possess the M2 or MK 19 had appropriate mounting devices(ring mounts) so that the weapons could

be fired from their vehicles.³⁷ All units had some night observation devices but none had enough to equip every vehicle or even every crew served weapon. All of the night observation devices were light amplification systems. No unit had any thermal imaging systems. The greatest deficiency was in radios. While most HMMWVs had vehicle mounted radios, almost none of the larger trucks had radios. There were few units with any man portable radios. No unit had enough radios to successfully command and control the defense of a company sized base or company sized convoy being ambushed. One MTP instructs support units in an ambush to "direct hardened vehicles equipped with an automatic weapon into position to lay down suppressive fire",³⁸ but there are no hardened vehicles in the MTOE and very few trucks capable of being hardened.³⁹ Support units are expected to fabricate materials once deployed. One TMT Truck Company MTOE provided six ring mounts, six M2 or MK 19s and six radios for a 60 truck company.⁴⁰ This provided potential equipment for one gun truck(hardened vehicle) for every 10 vehicles. Standard anti-ambush technique is a hardened lead, trail and mid convoy vehicle. Does this mean that the best equipped logistic company can form only two convoys? A ring mounted machine gun is in itself of dubious counter ambush value. It requires the gunner to stand exposed in the truck cab and fire the weapon without help. It is extremely difficult for a single person to hit ground targets using the M2 machine gun in such a mount. However, even this is better than nothing, which is what the majority of the trucks in the column have to defend themselves.

Mobility and Protection

Support units require protected mobility to perform the security mission. The support units must form patrols, base reaction forces and convoy escort forces. They must be able to quickly move about the area of operations independent of those vehicles which are executing the support mission. They need vehicles that can withstand the most common types of attack from mines and snipers and some vehicles that can act as “gun trucks” or escort vehicles to suppress enemy ambush or raid forces. No support unit possessed vehicles of this type. Their only command and control vehicle is the HMMWV, with which they lead most of their convoys. Yet the HMMWV is uniquely vulnerable to mines. Despite all the attempts to up armor or harden the HMMWV, it still cannot survive an anti-tank blast mine.⁴¹ This is because, the crew of a HMMWV ride extremely close to the ground. This puts them too close to the detonation point of a mine. There is no air gap for the effects of the blast to dissipate before the shock waves hits the personnel. The HMMWV has an extremely wide wheel base for such a low vehicle. This low, wide wheel base traps and absorbs the force of a blast rather than allowing it to spread up and around the sides of the vehicle. Lastly, the lightweight, aluminum body of the HMMWV is prone to “dynamic deformation” and “displacement” during a mine detonation.⁴² This means the body of the vehicle is compressed and or deformed by the blast crushing its crew. It is also thrown or displaced from its location on the roadway. This means that any crew members not killed by the blast and fragments or crushed by the collapsing metal, often go through an auto accident as well.

A study of vehicle losses since W.W.II shows that 66% of all vehicles lost since W.W.II have been to mines.⁴³ The percentage lost to mines goes up with each conflict. Despite this trend, there are no type classified vehicle hardening kits readily available to units.⁴⁴ Soldiers are reduced to using sand bags and locally fabricated iron work to armor their vehicles. The recommended number of sand bags to protect a troop carrying 5-ton truck is 243. At the stated weight of 40 pounds apiece, this adds up to 4.86 tons of sand bags on a 5-ton truck. This leaves only .14 tons or 280 pounds for troops and machine guns.⁴⁵ There are no recommendations for hardening the 2 1/2 ton truck. This is perhaps because the vehicle cannot carry the required weight in sand bags needed to protect it. There are also no recommendations for the HEMTT. This is curious because the HEMTT is uniquely suited to be used as a hardened transport vehicle or gun truck. Its eight wheeled drive and dual front axle steering means that it could lose one wheel to a mine and still retain some mobility. This would allow it to limp home or at least out of an ambush kill zone. The HEMTT is very heavy and would not be subject to dynamic displacement or deformation. It could also carry a very substantial protection and weapons package without losing mobility.⁴⁶

This lack of planning is particularly difficult to understand when there are both purpose built mine resistant vehicles and anti-mine appliqué kits for existing trucks widely available. South Africa has produced a whole series of mine resistant vehicles that have demonstrated the ability to survive very large mine blasts without injury to the crew.⁴⁷ Some of the nations that participated in Somalia possessed these vehicles as do some of those currently participating in Bosnia.⁴⁸ During the same period that a U.S.

HMMWV detonated a single anti-tank mine which killed all four crew members, a PUMA vehicle operated by Zimbabwe detonated three of the same type mines stacked on top of each other and rigged to detonate simultaneously. The PUMA vehicle suffered repairable damage to its suspension and no crew were seriously injured.⁴⁹ The CASPIR was designed using the components of an antique British 2 1/2 ton truck but can be made using the components of any similar sized or larger vehicle.⁵⁰ As mentioned above, a HEMTT could be modified into a very effective protected transport or convoy escort vehicle at a cost of approximately 25% increase in weight and cost.⁵¹

Leadership

Most importantly CS and CSS units need unified leadership under a single chain of command to synchronize all the other actions. Most CSS units practice a dual chain of responsibility whereby there is one person who is in charge of support operations for the higher units and another person who is in charge of security operations.⁵² The important branch qualifying field grade job in a typical logistics battalion is the Support Operations or Materiel Officer. This person is in charge of the principle sustainment or support mission and does not supervise security operations. The person in charge of both security of the support unit and intelligence is an "S2/3", usually a first lieutenant who is member of the support unit basic branch with no special training in intelligence or combat operations. This S2/3 does not have the experience, staff or equipment to perform the IPB, create the plans, orders and overlays or provide the command and control for rear areas security operations.⁵³ This separation of the support mission from the security mission is present at all levels of CSS organizations. At the RAOC level this is

understandable. Many units in the Corps or Division Rear area are not part of the support command for that Corps or Division. However, following this procedure in battalions which lack the special expertise leaves the support units without coherent intelligence support or command and control.

Personnel

In addition to shortages of equipment and lack of command emphasis for security or self defense operations, the MTOEs of support units provide the bare minimum number of people to accomplish the support mission without providing sufficient troops to perform the required security tasks.⁵⁴ If any of the soldiers become casualties as part of the security mission, there is no one to replace them on the support mission. This is particularly critical in low density MOSs where there may only be one or two people in a unit who can perform some critical technical function. These shortages place CS and CSS units commanders in a difficult situation. They must ask their soldiers to defend themselves without adequate means while simultaneously performing their support mission. Secondly they must decide which of their many technical specialists are too valuable to risk on perimeter defense. This action may preserve sustainment capability but lowers morale and doubles the load on the non-critical soldiers.⁵⁵

Because of the shortfalls listed above, current doctrine for level I defense in rear area security is not effective. Although the doctrine and TTPs are adequate in theory, CSS and CS units do not have the resources to build the required combat power. They could execute the doctrine for level I defense if they received the necessary resources and training.

c. Level II

While the doctrine for level I threats has minor problems, the doctrine for level II threats and in particular the transition from level I response to Level II response has many more problems. The doctrine is ineffective due to both TOE problems and command and control problems. There are not enough MPs and they do not possess the combined arms or equipment to defeat threat level II. They do not have the force structure to perform all of their other missions and yet still mass the combat power necessary to defeat a level II threat. The MPs that provide security in a given area do not work for the base cluster or RAOC commander of that area. They work for their MP Brigade commander who is under the Corps Rear Commander.⁵⁶ In order to commit the MPs, an order has to travel from the Base cluster or RAOC all the way up the chain of command to the Corps Rear CP and then down the MP side to the MP squad or patrol.⁵⁷

The MPs have four main missions of EPW Operations, Law and Order Support, Battle Field Circulation Control, and Area Security.⁵⁸ When committed to the first two missions, they are unavailable for the second two. A standard MP company has 36 MP teams. A standard MP patrol consists of two teams, each with three soldiers in a single slightly armored HMMWV with a machine gun.⁵⁹ To mass the combat power needed to defeat more than a few enemy infantry would require concentrating the MP patrols from a much larger area than the base cluster under attack. If the MPs disperse to cover their entire area of responsibility, then it will take them a long time to mass against a level II threat. If an enemy force of light infantry with mortars and LAWs in the Division rear area was able to stage 3-6 platoon sized attacks, it would quickly overmatch the MP

Company's ability to respond. A similarly equipped enemy force of Regimental size could likewise overmatch the MP Brigade in a Corps rear area.⁶⁰

The doctrine calls for the MPs to use supporting fires as it responds to level II threats yet the MPs have no organic fire support.⁶¹ In none of the doctrinal literature or unit AARs was there an habitual relationship of MPs and a fire support unit. Rear area fire support is always "on call", "provided by transiting units" or uncommitted CAS sorties.⁶² All of the doctrine described fire support for the rear area as an extraordinary mission. There was no mention of the typical fire support missions of direct support, reinforcing or general support. Should fire support be provided to the MPs, they have little ability to control it. The MPs in the response force will have to send their requests for fire via FM voice radio to either the RAOC or firing unit. The MPs have no Fire Support Teams(FIST) or fire support computers to plot precise artillery fires. They have no ability to designate laser guided munitions.⁶³ As a result, any artillery fire missions they do receive are going to be slow and relatively inaccurate. This inaccuracy is particularly dangerous in the rear area. An MP or other rear area soldier attempting to adjust artillery fire by voice in a congested rear area could potentially do more damage by fratricide than that caused by the enemy.

Compared to other rear area units, the MPs have impressive combat power. However, they do not have the combat power necessary to defeat the typical threat. An MP team vehicle can dismount only a single soldier. A typical patrol of two MP teams can dismount only two soldiers.⁶⁴ The enemy light infantry can be expected to use severely restricted terrain and built up areas to hide from response forces. The current

MP vehicle, the armored HMMWV, is vulnerable to mines and has no protection for the machine gunner. There has been a limited purchase of 95 Armored Security Vehicles for the MP Corps which will help to rectify this problem.⁶⁵ These will give one battalion of MPs the ability to adequately perform their mission. Although not an ideal solution, they possess the minimum characteristics needed for an rear area security vehicle. They are sufficiently armored so that the crew will survive small land mines, artillery fragments and heavy machine gun fire. They contain an armored weapon station that can be operated in the face of enemy automatic weapons fire.⁶⁶ Lastly they have enough room inside for dismounts.⁶⁷

Despite this improvement, the doctrine for level II response is still inadequate. MPs cannot provide direct support to the RAOC or Base Cluster if the order to commit them against a level II threat must come from their own MP Brigade. Additionally they would need far more actual MP units and these units would require significant augmentation in terms of fire support, engineer and dismounts.

d. Level III

The concept for the level III response, the creation and employment of the TCF, is the most fundamentally flawed portion of the rear area security doctrine. It violates the principles of war and the tenets of Army Operations. It all but guarantees that the TCF will arrive too late to protect the threatened support units or destroy the enemy force. In attempting to retain complete freedom of action for the close combat units in the short term, it sets the conditions for complete disruption of support activities in the long term. It makes inefficient use of combat power as the TCF sits doing nothing until committed

after the enemy has struck. Last, the units expected to act as the TCF do not have the force structure to properly execute the existing doctrine

The doctrine for designating and employing the TCF will de-synchronize the rear fight. The mission and command relationship of the TCF are ambiguous. As in the case of the level I and II forces, the TCF has a completely separate chain of command from the other two forces or the RAOC that should be controlling all three.⁶⁸ The doctrine also states that the TCF can only be committed to the rear fight by order of the Corps or main unit commander. The TCF is only under control of the rear area commander while it is committed.⁶⁹ The TCF may be permanent or on stand by. If the TCF is on call then it may be anywhere in the area of operations and may even be decisively engaged when it is needed. If the TCF is permanent but not committed, it is under the control of the parent unit but is positioned by the rear operations commander. All of the doctrinal manuals are adamant that the TCF should only be committed as a last resort because once it is committed, it robs the commander of flexibility. Rear Commanders are tasked to ensure that the threat cannot be defeated by level I and II forces before requesting the TCF.⁷⁰ Once committed the TCF then has to move to the site of the rear fight and conduct link up operations with both the MP level II response force and the CS or CSS unit originally attacked before it can begin to attack the enemy.⁷¹ All of these requests and coordination's are done between units that do not habitually work together and except for the MPs, do not habitually train for this mission. This complex command and employment relationship will take too much time. Support units may be destroyed while the response force and TCF coordinate. This relationship negates any U.S. mobility

advantage and surrenders agility to the enemy. An agile enemy would be able to concentrate, strike and disperse long before the TCF was able to influence the battle. If the enemy operated in units of company size or less, he might be able to completely disrupt sustainment operations without ever justifying commitment of the TCF.

In addition to violating the principle of unity of command with its unworkable command and control relationships, the current concept of the TCF surrenders the initiative to the enemy. The TCF only responds once the enemy has struck. If the commander does not commit the TCF, it sits doing nothing while the enemy plans his next attack. This allows the enemy to pick the time and place of battle. By forcing the commander to attempt to counter threats with level I and II forces, it delays his ability to concentrate his forces for decisive action. Army doctrine for deep and close combat operations directs that units conduct IPB and then strike the enemy at the time and place of our choosing so as to give U.S. forces the greatest possible advantage.⁷² Rear operations doctrine reverses this process and lets the enemy pick the time and place of battle while our combat power sits unused.

The Army does not have single force or type of unit optimized for use as a TCF. Consistent with the ad hoc nature of other rear security planning, the doctrine assumes that some portion of the main combat force will be task organized as the TCF.⁷³ The doctrine makes several suggestions to include aviation, light infantry and mechanized forces. The TCF is supposed to have its own direct support artillery but there is little discussion as to how this artillery will move, shoot or communicate in the rear area or how it will get back to the rear area once the TCF is committed.⁷⁴

The TCF must possess the combat power to destroy a battalion sized or larger threat and the mobility to react to that threat anywhere in the rear area.. Because of this requirement, most TCFs are formed around or contain aviation attack and lift assets. With the addition of light infantry and towed howitzers, this gives the TCF both rapid response time and some measure of staying power. The light infantry also gives the TCF the ability to pursue fleeing enemy into restricted terrain. The disadvantage of this type of TCF is that it is weather dependent and the infantry has little tactical mobility once landed.⁷⁵

Mechanized forces provide greater tactical mobility, more staying power and more reliable overall mobility. However, they are slower to respond than aviation borne forces and the tracked M1s and M2s have numerous draw backs to use in the rear area. Their size and weight means that they will be unable to use many roads and bridges and are likely to damage those they can use.⁷⁶ While the M1 and M2 have high road and cross country speeds, the artillery, engineer and maintenance tracked vehicles that accompany the infantry and armor can seldom sustain more than 20 mph.⁷⁷ Tracked vehicles are very expensive to maintain, especially when conducting frequent long road marches.⁷⁸ In MOOTW and LIC environments the presence of tracked vehicles may be provocative or politically unfeasible.

A dangerous compromise option is to mount light infantry forces on tactical wheeled vehicles as was practiced in Somalia. The practice is dangerous because it provides mobility without protection. The TCF can ride rapidly to the sound of the guns, but cannot move in the presence of the enemy or away from the enemy once engaged.

The experience of an ad hoc, wheeled vehicle mounted reaction force in Somalia will be discussed in the next section.

2) WHAT UNITS ARE DOING NOW - AARS, SOPS, OPERATIONS

To completely understand doctrine, it is necessary to study not just what is written, but what is being practiced in the field. For doctrine are those theories that are accepted, not just by schools, but by the units and soldiers who will execute them.

Therefore, this monograph will next review AARs from recent operations, AARs from the Combat Training Centers(CTCs) and other training exercises and research done by students at the Combined Arms Center's School of Advanced Military Studies(SAMS) and Master of Military Arts and Sciences(MMAS) program and the Army War College.

a. Recent Operations

Recent operations in Haiti, Somalia and Bosnia have revealed some of the issues that exist in performing the Area Security mission and the solutions that some units have applied. Many of the examples will be from other than typical rear area or CS and CSS missions. This is because the area security mission has often replaced the traditional close, deep rear battlefield structure for MOOTW missions such as these.

Haiti

In Haiti there was almost no armed opposition to the conduct of operations but there were numerous area security issues. The first was that in a failed state, there are far more sources of violence or hostile actions than in a normal situation. U.S. forces had to secure equipment from theft, negotiate with hostile crowds or mobs and react to many small disturbances spread over a wide area.⁷⁹ The forces in Haiti found that the 1st

Squadron, 2nd Armored Cavalry Regiment(1/2 ACR) was an extremely valuable force due to its mobility. The Cavalry Squadron(a battalion sized force) had almost as many HMMWVs as the deployed elements of the 10th Mountain division.⁸⁰ It was used as a fire brigade to rush from one problem to the next. It also conducted extensive patrols and operated checkpoints. The Cavalry units found themselves performing many missions that are normally assigned to MPs. Like many other MOOTW, the Army found that there were far more missions than MPs available.⁸¹

The 1/2 ACR found that while their organization had many advantages for use in the area security mission, it had some drawbacks. The first was the lack of dismounted infantry. A scout HMMWV carries 1 or 2 dismountable soldiers. The TOW HMMWV carries none. One advantage of the TOW HMMWV was the Thermal Imaging Sight, which was very useful as a general Night Observation Device. The Squadron was task organized with two airborne infantry companies which provided it the required dismounted soldiers for patrolling and Quick Reaction Force(QRF) duties where the HMMWVs couldn't reach.⁸² Other problems with the HMMWV were its low silhouette and lack of protected gunner's station. The Light Armored Vehicles(LAV) operated by the Marines were found to be much more versatile. Their tall height and protected turret meant that crowds could not surround and rock them like the HMMWVs. The crews were under armor protection, safely away from thrown objects, gasoline bombs or personnel climbing on the vehicle. The Marines found that the LAVs had the same effect on the crowds as tracked armored vehicles but were much easier to maneuver and caused much less damage to the roads and bridges.⁸³ The remaining shortfall was related to the

first. It is the lack of carrying capacity of the armored HMMWV. Even when augmented with infantry, the LACR had no protected means of moving them around the battle field. This lack of protected wheeled mobility was proved deadly in Somalia.

Somalia

In Somalia the U.S. was conducting a MOOTW that was not intended to include extensive combat operations. The Army forces initially did not bring armored forces because of the lack of an armored threat.⁸⁴ The warlords who felt threatened by the UN actions mined supply routes, sniped at convoys, held up unprotected convoys and eventually ambushed UN forces.⁸⁵ U.S. forces found that the HMMWV could not survive a mine blast and used 2 1/2 ton trucks or larger to lead convoys although these were still vulnerable. Troops used field expedient methods, and later on, some DOD provided kits to protect their vehicles from mines and ambush.⁸⁶ The Army relied primarily on aviation for a Quick Response Force. This worked well in the countryside where the helicopters could rapidly achieve fire superiority and suppress the enemy. Inside the city, this was much more difficult. The enemy could hide in masonry buildings which provided some protection and engaged the hovering helicopters at short range with large numbers of widely available RPG-7 light anti-tank weapons.⁸⁷

The battle of 3 Oct 1993 in which a force of Army Rangers attempted to capture a warlord but suffered high casualties gives a good example of the dangers of an improperly equipped and rehearsed reaction force. The helicopters which were to provide fire support for the operation could not fully suppress the enemy or stay in the engagement area without being destroyed. The planned QRF(TCF) was mounted in

HMMWVs and 5-ton trucks. This gave the TCF rapid response time but made it very vulnerable to ambush. Although many of the HMMWVs were of the armored type and the some of the trucks had been hardened with sand bags, they were unable to run the gauntlet of road blocks, machine guns and RPG fire to rescue the Ranger unit that was surrounded. Despite great heroism, the wheeled reaction force was forced to turn back. A second reaction force using Tanks and APCs was able to fight through and relieve the original group.⁸⁸ Although this incident did not involve an attack upon CS or CSS units, it is very illustrative of what can happen to an unarmored TCF and the dangers of ad hoc response forces.

Throughout the Somalia operation, the U.S. suffered numerous casualties to mines and snipers. Other countries deployed on this mission used various wheeled armored vehicles to great success. The CASPIR vehicle previously mentioned provided mine as well as small arms protection. Although too tall and thinly armored for fighting in the NATO Central Front, it proved an ideal vehicle for Somalia.⁸⁹ The units using the CASPIR were not from rich countries. A third or fourth generation mine resistant vehicle costs only 25-50% more than a regular cargo truck and much less than an APC.⁹⁰ The French and other countries used several types of wheeled AFVs to execute their mission. There were several important features that all of these vehicles had in common. They had turrets with heavy machine guns or small cannons. This gave them the firepower to suppress or destroy the enemy without exposing the crews to enemy fire. They all had monocoque⁹¹ hulls made of relatively thin, unsophisticated armor. When these vehicles detonated a mine, the wheeled suspension gave 2-3 feet of stand off

between the source of the explosion and the hull. The hulls were narrow relative to their height. They were also V shaped or narrower at the bottom than at the top. This deflected the blast around the outside of the hull. Although the vehicle would be disabled by mines, the crews inside were rarely injured. The wheels provided high mobility at low cost and little damage to the already poor Somali roads. These vehicles conducted patrols, guarded checkpoints, escorted convoys and served as reaction forces.⁹² In similar situations, U.S. troops had only thinly armored HMMWVs which could not survive a mine blast or unarmored trucks which had some ability to survive the mines but was vulnerable to direct fire. The eventual deployment of M1s and M2s provided the firepower and protection that was needed. These systems had originally not been deployed because of their size and expense and the perceived lack of a threat requiring their massive firepower and protection. Unlike France and many other countries, the U.S. has no intermediate option for mobile forces. It must either send M1s and M2s or HMMWVs.

It is interesting to note that prior to the Army deployment to Somalia, the U.S. Marine contingent deployed there did use armored vehicles. The commander of the provisional Marine tank platoon that operated in Mogadishu reported that the tanks had several beneficial capabilities.⁹³ The tanks conducted gunnery practice on a regular basis. The noise and shock of the main guns firing always drew a crowd of local people. The commander felt that although the tanks never fired their main guns in anger, all the Somalia belligerents knew of their power and avoided challenging them. The tanks were impervious to any weapon in the theater and could push through any roadblock the

Somali's could build. During fire fights the tanks acted as "bullet magnets" in that all of the Somali's would fire on the tanks and ignore the Marine or UN dismounted soldiers. Although the Somali's know that their small arms would have no effect, they always directed all of their fire at the tanks no matter what other targets were available. The Marines felt that this combination of overwhelming firepower and impervious protection gave them a strong moral ascendancy over the belligerents. They could show up at a confrontation or fire fight and diffuse the situation by their simple presence without returning fire.⁹⁴ The combination of power and restraint that the tanks showed demonstrated that they were the masters of any situation they chose to participate in.

Bosnia

In Bosnia the Army deployed with heavy forces from the beginning. Although our allies objected to their provocative nature, both the U.S. and Canada brought forces capable of defeating any known threat in the area.⁹⁵ These forces provided a deterrent effect by overawing the belligerent factions. The capability to use overwhelming force made the restraint that was shown much more effective. The Canadian battalion deployed with both tracked and wheeled armored vehicles. They found that while MBTs performed the best against mines, wheeled armored vehicles were more survivable against mines than tracked armored vehicles of equivalent weight. This was because the wheeled vehicles(6X6 versions of the Marine Corps LAV) had much higher ground clearance and round bottom hulls. This provided stand off and dissipated the blast. The lighter tracked vehicles(M113 series) with their low, flat. hulls absorbed the blast. The blast would penetrate and deform the thin aluminum armor, killing the crew inside.⁹⁶

In addition to mines, the forces in Bosnia were frequently subjected to sniper fire and the interdiction of convoys. The UN forces found that the presence of an armored vehicle could often intimidate the belligerents into letting the convoy pass. The armored vehicles could also sit and endure sniper fire while pinpointing its source. The snipers would frequently fire from bunkers or inhabited buildings. Because of the armor protection, the security force would not have to immediately return fire in a general direction but could take their time to locate exactly where the sniper was. The security forces could then destroy the sniper without causing collateral damage by using a small caliber cannon or an inert training round from a larger caliber weapon.⁹⁷ The Canadians preferred their wheeled AFVs to the M113s for convoy operations. In addition to being more survivable to mines, the wheeled vehicles required far less maintenance than the tracks. In the case of the Canadians, their wheeled vehicles possessed armored turrets for the gunner and commander while the M113s had only an exposed machine gun position. The turret protected the crew from snipers and thrown objects and the optics provided the ability to see farther or at night.⁹⁸

U.S. force deployed to Macedonia found that the wheeled armored vehicles used by the Nordic Battalion were superior to their own. The 6X6 SISU APCs could negotiate snow and ice covered terrain that was impassable to both HMMWV and M113. They also found that the SISU caused much less damage to the narrow unpaved trails used by the patrols. U.S. forces deployed to Bosnia have found that the M1s and M2s cannot use many of the roads and bridges in the countryside. While the vehicles possess excellent

mobility, the simply cannot fit through many narrow curves, tunnels and bridge super structures.⁹⁹

b. CALL Observations

In contrast to the wealth of data on area security during actual operations, there is comparatively little in the CALL data base on area security during simulations or at the CTCs. The few comments and lessons learned centered around the MPs and the TCF. There was consistently a shortage of MPs. The lessons recommended prioritizing requests for MP support so that the MPs could accomplish a fewer number of missions to the appropriate standard.¹⁰⁰ The other group of lessons discussed the composition of the TCF. Most recommended an aviation task force with light infantry and towed howitzers that could be rapidly moved by lift aviation. Beyond these two themes, there was very little in the CALL data base.

A review of MMAS, SAMS and Army War College papers reflected a broader profile. The papers shared the AARs findings on the shortages of MPs and use of aviation for the TCF. There was also a vocal criticism of the 1985 version of FM 90-14, which has since been rescinded.¹⁰¹ Despite the withdrawal of FM 90-14, most of the criticism directed at the doctrine in that manual still applies to the remaining manuals.

The cause of the shortage of information or lessons learned on rear area security operations in the CALL data base may lie in the nature of the exercises. CTC rotations are focused on the training and evaluation of combat arms battalion and brigade staffs. The FSBs are exercised, but their evaluation is focused on how they supported the close battle rather than how they fought the rear battle. Any Opposing Forces(OPFOR) activity

that is directed against them is coordinated by the logistics Observer Controllers(OC) rather than the main OPFOR controller.¹⁰² Like rear area security in the rest of the Army, at the CTCs it is an ad hoc after thought to more important matters. Because the CTCs can exercise no more than a Brigade, there are no CTC quality(dedicated OPFOR, instrumentation) exercises of rear area security for units that work in the Division or Corps rear. There are Corps support units that conduct quality self defense training, but this is due to the initiative of individuals in those units and not to Army wide doctrine.¹⁰³ There are rear area security actions during simulations such as the BCTP exercises. These simulations are designed for higher level planners and do not accurately depict company sized and smaller unit actions.¹⁰⁴ The doctrinal problems of synchronization and multiple chains of command between the support units, MPs and TCF are not replicated or "played" by the computer. These faults in the doctrine will be most apparent at the company level where they would be revealed by actual operations. Therefore, although there are rear area security issues "played" during BCTPs, they seldom generate any lessons learned for convoy operations or small unit defense during the simulation.¹⁰⁵

What should be the doctrine?

To correct these problems, the Army must reconsider the importance of rear area security to the success of the overall mission. If it has become relatively more important, then the following steps would be appropriate. The Army should first enforce the discipline to properly execute the doctrine that it currently has. It should ensure that

commanders give the appropriate emphasis and training time to rear area security. It should also provide adequate equipment for support units to establish a viable defense. Second, it needs to create a dedicated security force to perform the Area Security mission in the Rear Area. This force would be responsible for level II and III threats. It would allow the conduct of rear area operations that is synchronized with the close and deep fight and is consistent with Army doctrine.

1) LEVEL I

The most important thing that can be done to enable support units to defeat the level I threat is to give it more emphasis in training. Commanders, both combat arms and support, must strike a balance between the demands for support and the demands for security. Combat unit commanders must balance their expectations for support and sustainment during large scale training exercises. They must allow time for the CS and CSS units to conduct their own EXEVALs and allow them to use some of the valuable CTC time for security missions. Support units must cease to view their support mission and the security of their unit as two separate and conflicting missions. They should use the same personnel and command posts to track the rear battle that they use to track sustainment of the supported units. This will ensure unity of effort and integration of base defense into sustainment operations plans. Commanders must train CS and CSS units to execute and track combat operations as an adjunct to support operations just as combat forces execute and track logistics operations as an adjunct to combat operations.

If support units are expected to defend themselves, then they need to be given the necessary weapons and equipment. Although it would be financially impossible to equip

them with the latest light infantry technology, it is possible to cascade much of the older infantry equipment that is being replaced in the light infantry units. Every support vehicle and squad size unit have some type of radio. They could be issued the older AN PRC-77, and AN PRC-26/27 radios as those items are replaced by new equipment in the combat units. Every vehicle and squad sized unit ought to have some type of night vision goggles. Every crew served weapon ought to have a night vision sight. These could again come from combat units that are fielding newer generation devices. A critical deficiency in support units is the total lack of thermal imaging systems. These devices give a tremendous advantage not only as weapons sights but for detecting well camouflaged enemy soldiers and mines. A thermal imaging system mounted in the lead vehicle of a convoy would give it the ability to detect an ambush before entering the kill zone. As with the radios, the Army can avoid purchasing additional new devices by cascading older systems to CS and CSS units.¹⁰⁶

Support units need to be issued and train with mines and Light Anti-Tank Weapons. These items are not listed on the MTOE but on the training ammunition documents. As in the case with radios and NODs, support units do not need the newest AT-4s to defend themselves. They should train with M72 LAWS and have the remaining war stocks of those weapons set aside for their use during a conflict. Support units need to be able to mount an automatic weapon on every vehicle. Some vehicles should have the MK 19 grenade launcher mounted in a ring mount. The MK 19 is much more effective at suppressing an enemy than the M2. Most vehicles should have a new truck machine gun mount designed for lighter machine guns and that will provide some

protection to the gunner. The M242 SAW provides adequate suppression for defeating infantry ambushes. The SAW is easier to handle, can be dismounted and carried by one soldier and holds more ready ammunition. Some vehicles in each CS and CSS company should be equipped to function as gun trucks. These vehicles would have two to four heavier mountings that bolt into the bed of a 2 1/2 ton or larger truck. Support soldiers should not have to resort to sand bags and plywood to protect their vehicles. The Army must field a vehicle hardening kit for each type of wheeled vehicle. It may be too expensive to retrofit these to every vehicle in the total force, but they should at least be available for units to install prior to deploying to theater. There should be a kit for cargo vehicles and one for gun trucks. By using materials already available, kits could be made that will protect the crew and still allow a useful cargo load. The HEMTT which as already proven a superb reputation for durability in Desert Storm, is a highly survivable vehicle and should be developed as a protected cargo and convoy escort vehicle. In addition to the advantages of multiple steered axles, height and weight mentioned earlier, the HEMTT would be relatively simple to modify into a 3rd generation mine resistant vehicle.¹⁰⁷

2) LEVEL II and III

While problems with level I doctrine can be fixed by modifying TTPs and adding some resources, problems with level II and III require revision of the doctrine itself and changes in force structure. The revisions must address Unity of Command, and Initiative. They must also re-look roles of Combat, CS and CSS units and the nature of support relationships.

The biggest problem with the doctrine is that it violates the principle of unity of command. It exacerbates the problems caused by the separation of the support and security missions that is present in all support units. The Corps sub divides its geographic area and places RAOCs in control the rear area security mission and terrain management in those sectors. However the RAOC does not control sustainment activities in its sector. This situation is difficult but unavoidable. What can be avoided is the fact that the RAOC does not control the MPs, Engineers and other potential response forces in its sector. Both these units and the RAOC are part of the Corps. The RAOC under current doctrine must go to Corps for use of these forces that live in its sector. The RAOC does not have its own TCF or any other force to use in a proactive manner. Since the RAOC is a subordinate headquarters of the Corps for a geographic area, it should have operational control for security missions of all Corps units in that area. Secondly, the RAOC must have a dedicated response force under its control that is not subject to being pulled away for a sustainment mission by the parent unit. The RAOC must have force available to act as a reserve or reaction force in situations where the TCF is not needed or not available. It must also be able to use this force proactively when it identifies enemy units who have concentrated but not yet struck a support unit. Therefore, although the RAOC cannot have complete chain of command authority (security and sustainment) over every unit in its area, it must have command of the response forces in its area.

The Corps Rear Commander must have full time control over his TCF. The TCF the response forces and the Bases and Base Clusters must all be part of the same chain of

command. They must operate on the same radio nets and be responsible to the same commanders. The TCF once designated, should be considered a committed force at the disposal of the rear commander. The rear commander must be able to commit all or part of the TCF as the situation warrants without approval of the force commander. The TCF should be employed proactively. It should not wait for the enemy to mass battalion sized assault forces but should strike him before he can do serious damage. The TCF should be the parent unit of the RAOC level II response forces. This will reduce the problems experienced when the TCF has to link up with the response force and conduct battle handover.

The TCF/security force should not be an ad hoc force created as an afterthought to the concept of operation. It should be an organic part of the force structure that trains in peacetime to execute the rear area security mission. Its organization and equipment should be optimized for the area security mission. It will provide the traditional Level III TCF, a mobile reserve capable of defeating a battalion sized enemy or larger, along with the Level II response forces that support the RAOCs. The RAOCs will in fact become the subordinate headquarters of the security/TCF force. This avoids the delay and confusion caused when requests for support travel from Base Cluster to RAOC, to Rear CP to MP Bde etc. Under the new system, once a Base Cluster calls for help, it will be dealing with a single unified chain of command of a cohesive organization that has trained together for this mission. The security force's relationship to the CS and CSS units should be reversed from that of typical combat units. Instead of CS and CSS units existing to support the Combat units, the TCF/security force should exist to support and

protect the CS and CSS units. The Security force/TCF may often be the only combat force deployed on a particular MOOTW.

A dedicated area security force avoids the problems caused when close combat forces prepare for MOOTW and LIC missions. Many commanders worry that training for MOOTW will cause their soldiers combat skills to erode and leave them unprepared for their "real" mission.¹⁰⁸ Many allies, diplomats, NGOs and potential coalition partners worry that deploying close combat soldiers to a MOOTW will be counterproductive. TTPs that ensure survival in close combat may cause excessive collateral damage, or fratricide and jeopardize political objectives in MOOTW. Use of restraint appropriate to MOOTW may get soldiers killed in close combat.¹⁰⁹ The area security force can focus on TTPs that use the restraint appropriate to MOOTW or RACO because it does not have to worry about many close combat threats. The area security force will not have to fight massed enemy armor. It does not need an Armored Gun System capable of destroying main battle tanks. It will not have to operate under massed enemy artillery fires or breach complex obstacles. It will employ small amounts of very precise fire support rather than massed fires.

There is no current organization that can adequately perform the role of Corps security force. All existing combat units are either too heavy or too light to do the job effectively. However, a highly effective Corps Security Force could be created by combining the Light Armored Cavalry Regiment with additional Corps Engineer, Aviation, and Military Police units to create a Corps security Brigade. The Light ACR contains the basic structure to perform the security role plus has its own fire support,

Aviation and Military Intelligence assets. It would need more lift aviation to move the level III TCF. It would need infantry to make up the TCF and to provide combined arms capability to the level II patrol and reaction forces. Appendix 3 discusses a more detailed make up of the Security Brigade.

The security force will operate much like the US Cavalry on the frontier during the 19th century. It will operate in small groups on a widely dispersed battlefield. It will perform three principle functions in its area security mission. It will protect of key assets, aggressively patrol to seek out the enemy before he strikes and provide a reaction force to those units under attack. It will have to use restraint in its operations to avoid fratricide, collateral damage and alienating the local population. Above all it will be a dedicated force at the disposal of the rear commander. It will be considered committed from the first moment of the operation so that there are no strings upon its employment.

The Security Brigade will be placed under control of rear commander. The Brigade headquarters will serve as his Corps RAOC and the Brigade MI Company will focus on the rear threat. The Brigade will form an approximately battalion sized reaction force out of the aviation and light infantry battalions. This TCF will not simply wait for threats to develop but will work with the MI company to identify and destroy threats before they threaten support units. The Brigade will then divide the Corps rear area into battalion sectors. The Security Battalions will form company sized reaction forces for use against level II threats in their sector. They will use the reaction force, howitzer batteries and battalion headquarters to form one to two fire bases. The fire bases will be co-located with, and help to secure, logistics base clusters. These fire

base/base clusters will provide fire support and reaction forces to patrolling level II elements.

The security companies will locate their headquarters and mortar sections in isolated or outlying logistics bases. They will conduct patrols in and around the base clusters and along LOCs. They will provide immediate reaction to smaller Level II threats and can provide escort to critical, vulnerable or non-recoupable convoys. They will normally have a geographic sector in which to provide area security but *CAN BE* DS to a support unit, responsive to the CS/CSS commander within overall security plan. The security force will operate as combined arms organization down to platoon level. The security platoons will patrol MSRs and around bases and base clusters. They will assume the area security mission formally performed by MPs. A platoon might form 2-3 patrols of 2-3 vehicles apiece. Each patrol would have the combat power to defeat an infantry squad or platoon that was conducting an ambush or raiding a base. The patrols would operate close enough to each other to be able to mass with 10-20 minutes. The massed platoon would possess the combat power to defeat a company size infantry threat, call for fire support and dismount a squad sized force to clear buildings and help the support units consolidate and reorganize after the fight.

This security force would provide much more responsive protection to the support units. The support units would have a single unit and chain of command to coordinate with from the daily MSR patrols all the way to the TCF. Fire support and the FISTs to control it would be available immediately throughout the sector. The security force

would not wait for the enemy to strike but would have the assets to find and destroy him before he disrupted the support units.

CONCLUSION:

*"Doctrine captures the lessons of past wars, reflects the nature of war and conflict in its own time, and anticipates the intellectual and technical developments that will bring victory now and in the future"*¹¹⁰

Measured by this standard, the Army clearly does not have an effective doctrine for conducting area security and protecting Combat Support and Combat Service Support units. Current doctrine leaves support units vulnerable to the same dispersed light infantry threat that has been the most common threat since W.W.II. The doctrine remains focused on a narrow band in the spectrum of conflict centered on our most dangerous opponent. It ignores current developments that have seen the demise of our most dangerous high intensity threat and the increasing frequency of Military Operations Other Than War. It continues to treat Area Security as an ancillary effort even though CS and CSS operations are the main effort in most MOOTW and many LIC. In the less likely event of a Mid to High Intensity Conflict, it fails to allow for an enemy who refuses to fight on our terms. It does not recognize that the most likely course of action for our enemies will be to avoid the power of our close and deep forces and strike at the weakness of our rear area forces.

In his second book, Colonel Summers chronicled how the Army had learned from its defeat in Vietnam and had developed an effective doctrine which it demonstrated in Desert Storm.¹¹¹ However, this tremendous growth in combat power and the continuing refinement of doctrine focused only on the close and deep fight. US Army Combat

Support and Combat Service Support units are no better able to defend themselves now than they were in Vietnam. The Army's Rear Operations doctrine may be effective for the worst case mechanized peer opponent whom we would like to fight. However, it is wholly ineffective for the most likely case, dismounted light infantry opponent/belligerent/bandit who we usually fight.¹¹²

In the past, failure to correct the deficiencies in the Rear Operations and Area Security doctrine were due to the belief that rear operations would not be decisive. Attacks by the enemy in the US rear area would be painful but not catastrophic. Even the most able enemies could inflict no Pearl Harbors on US forces by ambushing fuel trucks. When it was confronted with the threat of the Soviet Group of Forces Germany, the Army could not afford to spend a significant effort on protecting support troops. Now that the most dangerous threat is gone, the Army cannot afford not to protect its support troops. CS and CSS troops will frequently be the only forces deployed on many MOOTW and will be the main effort in most. Enemy attacks on support troops will cause preventable casualties, frustrate US objectives and sap US will to support the operation. Support units must have the ability to defend themselves. They must also have a dedicated and trained combat force to support them and the accomplishment of their mission. They are the only viable target left for an enemy confronted by US close combat forces.

The Army should restructure the TOEs of support units at the Company level so that they can defend themselves against light infantry forces both in their bases and while moving. They do not require high tech equipment but simply the older equipment

displaced by the fielding of newer items. The provision of a dedicated combat force to provide level II and III protection the logistic support base should be the first priority of combat units and not the last. The Army should create a Corps Security Brigade to perform the Area Security mission in the Corps rear. The combat power of the security force should be focused on the most likely threat and not mythical legions of T-72s. Its firepower should be designed to destroy infantry rather than tanks. Its protection should be designed to defeat mines and small arms rather than anti-tank weapons. Its mobility should be designed for operating on or near the dusty roads of the third world rather than the muddy battlefields of Central Europe.

The Army must change the way it conducts Area Security if it is to have a doctrine that is applicable across the spectrum of conflict. If it does not, then it is very likely that conversations similar to the one described by Colonel Summers will take place again. Future American Colonels will be puzzled as to how we could dominate the maneuver battlespace and win the information battle and yet lose the war. Future opponents will explain that despite all the hardware and software changes, Americans still retain the same vulnerabilities that led to their defeats in Korea, Vietnam and Somalia. If you kill enough American soldiers and, despite your losses, do not quit yourself, eventually they will grow tired and go home. Given that fact, the easiest Americans to kill are the support troops.

NOTES:

¹ Harry **Summers**, On Strategy: The Vietnam War in context, (Carlisle: Strategic Studies Institute, US Army War College, 1981), 1.

² Daniel **Bolger**, "**The Ghosts of Omdurman**", 1991. Excerpt reprinted in The Evolution of Modern Warfare, (Fort Leavenworth: USACGSC, 1995), 656.

³ *This was the author's impression having studied Summers book as an undergraduate and then, as a participant in Desert Shield/Storm followed the progress of the conflict from month old newspapers.*

See also: Harry Summers, On Strategy II: A critical analysis of the Gulf War, (New York: Dell Publishing, 1992).

⁴ Arthur S. **DeGroat** and David C. Nilsen, "Information and Combat Power on the Force XXI Battlefield," Military Review, (NOV.-DEC 1995), 62.

See also: US Army Training and Doctrine Command, TRADOC PAM 525-5, Force XXI Operations, (Fort Monroe: TRADOC, 1 Aug. 1994), 2-5..

⁵ *The 1976 version of FM 100-5 devotes 1/4 page to rear battle, the 1982 version has a short chapter devoted to rear battle, the 1986 version deleted the chapter on rear battle but mentions FM 90-14 "Rear Battle" published in 1985, the 1993 version has 1/4 page on rear operations and does not mention FM 90-14 which was rescinded and not replaced.*

⁶ Bolger, Ghosts of Omdurman, 656-657, 659.

See also TRADOC PAM 525-5, 2-10.

and: Don **Conley** and Ronald Shun, "Vehicle Hardening Means Survival," Army Logistician, (May-June 1995), 24.

⁷ Daniel **Bolger**, Savage Peace: Americans at war in the 1990's, (Novato, CA: Presidio, 1995), 70.

See also: Wayne A. **Sinclair**, "Answering the Land Mine," Marine Corps Gazette, (July 1996), 37.

The exception to this trend being Desert Storm. The single greatest casualty event in that conflict was an attack against support troops (the Scud strike that hit a laundry and bath unit in the port of Dhahran) but it was carried out by a ballistic missile which is outside the scope of this monograph.

⁸ Bolger, Savage Peace, 79.

⁹ Brian R. **Layer**, Some Principles of Convoy Operations in Operations other Than War, (Fort Leavenworth: School of Advanced Military Studies(SAMS), January 1993), 36.

¹⁰ Faris R. **Kirkland**, et al. "The Human Dimension of Force Projection: Discipline Under Fire," Military Review, (March-April 1996), 58-60.

See also: T.K.D. **Geburt**, Operation Cavalier - End Tour Report, 2nd Battalion, Royal Canadian Regiment, 4 June 1993, (Fort Leavenworth: CALL Collection, 1996), A 4/8.

and: Andrew F. **Krepinevich**, The Army and Vietnam, (Baltimore: Johns Hopkins University Press, 1986), 170.

¹¹ Geburt, A 4/8.

See also: Directorate of Combat Developments, Mounted Forces Role in OOTW, Fort Knox: US Army Armor Center, 1995. 23.

and: A. Martin **Liddy**, Alternative Multinational Force Capabilities for OOTW, (Alexandria, VA: Institute for Defense Analysis, 1995), G-190.

¹² William C. **Schneck**, AAR Restore Hope, (Fort Belvoir, VA: Countermines Systems Directorate, US Army Belvoir Research Development and Engineering Center, 1994), 7, G-6.

See also: Peter **Stiff**, Taming the Landmine, (Alberton, RSA: Galago Press, 1986).

¹³ T.E. **Putt**, (ed). "**Convoy Operations**:", Dispatches, The Army's Lessons Learned News letter, (Canadian Army Land Force Command Headquarters, G3 Training Development, 7 April 1995), 13. *See also:* Schneck, 11. *and:* Stiff.

and: Ralph **Zumbro**, Tank Sergeant, (Novato, CA: Presidio, 1986).

¹⁴ Stiff, 41-45, *See also:* Schneck, 31-32.

¹⁵ Douglass **Pike**, PAVN: People's Army of Vietnam, (Novato: Presidio Press, 1986), 215.

¹⁶ **Mao Tse-Tung**, On Guerrilla Warfare, Translated by Samuel B. Griffith, (New York: Praeger Publishing, 1961), 8.

¹⁷ **Bernard Fall**, Street Without Joy, (New York: Schocken Books, 1964), 330-356.

¹⁸ *Ibid*, 355-356. *See also* Donn A. **Starry**, Mounted Combat in Vietnam, (Washington: Department of the Army, 1977), 72. *and:* Zumbro 130-140.

¹⁹ TRADOC Pam 525-5, 2-5.

²⁰ *For example the M1A2 tank combines a level of protection that is unmatched by any tank in the world due to its advanced armor, compartmentalization and fire suppression. Its mobility is also superior due to the power and reliability of the turbine engine. Likewise the thermal sights and digital computer give it firepower that is only matched*

by the best German and French tanks. Last, this mobility, firepower and protection are focused on the critical part of the battlefield due to the Intervehicular Communication System(IVS)and the Position Location and Reporting System.

²¹ Paul H. Herbert, Leavenworth Paper Number 16, Deciding What Has to Be Done: General Depuy and the 1976 edition of FM 100-5, Operations, (Washington: US Government Printing Office, 1988), 113.

²² Bolger, Ghosts of Omdurman, 659.

²³ See Appendix 1.

²⁴ Department of Logistics Resource Operations, USACGSC, **Student Text 101-6, G1/G4 Battle Book**, (Fort Leavenworth: USACGSC, June 1995).

For example, the 15 Fuel HEMTTs of a Tank Battalion carry 37,500 gallons of fuel. The Battalion will consume 41,267 gallons in a 24 hour period(p. 1-5). The Supply Company of the FSB can only store 50,000 gallons to support its three maneuver battalions and attached units. However it can issue from 80,000 to 160,000 gallons depending on the distance to the Division Support Area(DSA)(p.4-14). The Supply Company of the MSB can store 120,000 to 170,000 to support its 3 Brigade FSBs plus Division troops. It can distribute 260,000 to 520,000 depending on the distance to the BSAs(P-4-7). Each level of support has only enough fuel on hand to supply one of its supported units for one day and depends upon daily resupply to support the force. Therefore it is easy to see how an interruption of traffic along the LOCs will bring a halt to the movement of the down stream units within 24 hours.

²⁵ U.S. Department of the Army, **FM 44-18C1, Air Defense Artillery Employment, Stinger**, (Washington: Government Printing Office, May 1985), 5-8.

The Vulnerability, Criticality, Recoupability methodology is used by Air Defense planners in assessing which assets to protect was first explained to me as lieutenant. It has proven very useful ever since. I feel that it has wide applicability in both target selection and asset protection.

²⁶ *The MIAI tanks of TF 4-8 Cavalry required 200-250 gallons of fuel every 6-8 hours during the VII Corps attack into Iraq during operation Desert Storm. This was consistent with fuel consumption experienced in Germany before the conflict and the G-1/G-4 Battle book tables.*

²⁷ B.E. **Salmon, Raiding Logistics: The low cost alternative to fighting fair**, (Newport: Naval War College, Feb. 1994), 1-5.

see also: Bolger, Savage Peace, 69-70:

and: James L. Saunders, Rear Operations: Protecting Points of Decision, (Fort Leavenworth: SAMS, January 1987), 1-2.

²⁸ Pike, 248.

²⁹ Liddy, G-191.

³⁰ U.S. Department of the Army, DA PAM 25-30, Consolidated Index of Army Publications and Blank Forms, (Washington: Government Printing Office, 1 July 1996).

³¹ C. Hansrote, Rear Operations Doctrinal Overview(Briefing Slides), (Fort Leavenworth: Corps and Division Doctrine Directorate, Command And General Staff College, May 1996), 7.

³² US Department of the Army, FM 100-15-1, Corps Operations TTP(Initial Draft), (Fort Leavenworth: Corps and Division Doctrine Directorate, Command And General Staff College, June 1996), B-1

See also: US Department of the Army, FM 101-5-1, Operational Terms and Graphics(Final Draft), (Washington: Government Printing Office, 15 July 1995),. 1-226.

³³ U.S. Department of the Army, FM 90-14, Rear Battle, (Washington: Government Printing Office, June 1985), 1-2.

³⁴ FM 101-5-1, 1-225.

³⁵ FM 90-14, 3.19-3.22, C.1-C.2.

See also: U.S. Department of the Army, FM 100-16, Army Operational Support(Final Draft), (Washington: Government Printing Office, 4 April 1994), chapter 15. U.S. Department of the Army, FM 71-100, Division Operations, (Washington: Government Printing Office, June 1990), 1-15.

and: U.S. Department of the Army, FM 100-15, Corps Operations, (Washington: Government Printing Office, 1 June 1996), 2-7.

³⁶ *The five listed below are not the only MTOEs studied but are typical. They were selected units based on the Criticality, Vulnerability, Recoupability that I believe an enemy would use in targeting our support forces. All perform a critical mission and their loss would severely curtail the freedom of action of the combat units they support. All are vulnerable because they must move along LOCs or must set up small detachments in remote areas to accomplish their mission. All are unrecoverable since their loss would kill or destroy key low density personnel and equipment such as MSE operators or Palletized Loading System(PLS) Trucks.*

U.S. Department of the Army, Modified Table of Organization and Equipment(MTOE), 09483L000, Ordnance Company Ammunition DS MOADS, (Washington: Government Printing Office, 11 April 1993).

U.S. Department of the Army, Modified Table of Organization and Equipment(MTOE), 55718L200, Transportation Motor Truck Company(TMT), (Light), (Washington: Government Printing Office, 11 April 1993).

U.S. Department of the Army, Modified Table of Organization and Equipment(MTOE), 55727L200, TMT Company (Medium) Petroleum, Oil and Lubricants, (Washington: Government Printing Office, 11 April 1993).

U.S. Department of the Army, Modified Table of Organization and Equipment(MTOE), 55728L300, TMT Company Palletized Loading System(PLS), (Washington: Government Printing Office, 11 April 1993).

U.S. Department of the Army, Modified Table of Organization and Equipment(MTOE), 11067L200, Area Support Company, Signal Battalion(MSE), (Washington: Government Printing Office, 11 April 1993).

³⁷ *The ring mount can only be mounted on a 2 1/2 or 5 ton truck with a canvas top for the crew cab. There is no provision for a machine gun to be mounted on the cab of a HEMMT, PLS, or the over the road tractors(M914, M915, M916).*

³⁸ U.S. Department of the Army, Army Training and Evaluation Plan(ARTEP), 10-427-30 MTP, Mission Training Plan for Petroleum Supply Company, (Washington: Government Printing Office, September 1993), 5-40/3E.

³⁹ (MTOE), 55727L200, TMT Company (Medium) Petroleum, Oil and Lubricants.

⁴⁰ (MTOE)55718L200, Transportation Motor Truck Company(TMT), (Light).

⁴¹ Schneck, 4-7, 34.

⁴² Ibid, F-2.

⁴³ Ibid, 23, Table X. *see also: Sinclair, 37: Starry, 79 and Fall, 354, for the French experience in Vietnam.*

⁴⁴ U.S. Army Transportation School, Fort Eustis, Va., Vehicle Hardening and Convoy Operations, 31 July 1994, (Fort Leavenworth: CALL Collection, 1996), 6.

⁴⁵ Ibid, 5-10.

⁴⁶ *During Desert Storm the author observed numerous wheeled vehicles to include his M35A2 supply truck that were heavily damaged by mines or Cluster Bomb Munitions. The HEMTTs however, appeared to be immune rarely suffering even a punctured tire after detonating a mine or CBU.*

⁴⁷ Stiff, 104-107. *see also : Sinclair, 39. and: Schneck, 30-32.*

⁴⁸ Schnek, 29.

⁴⁹ Ibid, 29.

⁵⁰ Stiff, 110.

⁵¹ Sinclair, 40.

⁵² FM 90-14, 3-23-3-24. *See also:* FM 100-15-1, B-4.

⁵³ Lyle, **Hohnstine**, "Combat Training Centers: The 21st Century School for Application of Military Art and Science", CTC Quarterly, (January 1996), II-9-II-10.

⁵⁴ U.S. Department of the Army, **FM 11-37-MSE Operations**, (Washington: Government Printing Office, Nov. 1990), 1-5,1-6,1-11. "Most Nodal elements are manned with so few personnel that defense under live attack is not likely to be successful".

See also: U.S. Department of the Army, **FM 11-50, Combat Communications within the Heavy Division**, (Washington: Government Printing Office, April 1991), E-1. *The manual states that a Radio Access Unit(RAU) which must be located on high ground to function, contains one HMMWV and 3 personnel.*

See also: (MTOE), 55727L200, **TMT Company (Medium) Petroleum, Oil and Lubricants**. *The Company has 134 soldiers in MOS 88M to crew the sixty 5,000 fuel tankers with which it performs its mission. This leaves only 14 88M soldiers beyond drivers and vehicle commanders to perform security tasks or crew in escort vehicles. There are a total of 26 other E-1 through E-6 soldiers in the Company. These are all communications technicians or mechanics.*

⁵⁵ Chip **Carroll**, "10 Steps to a better BSA Defense", CTC Quarterly, Jan 96, 35.

Reviewing the MTOEs, the Signal Company has seven MOSs in the rank of E-5 or below with only a single soldier in the Company. The POL Company has eight and the Ammunition Company has nineteen.

⁵⁶ U.S. Department of the Army, **FM 19-4, Military Police Battlefield Circulation Control, Area Security and EPW Operations**, (Washington: Government Printing office, May 1993), 95-103.

See also: Paul C. **Mouris**, **Rear Area Combat Operations and prisoner of War Operations: Can We Do Both?**, (Carlisle Barracks: U.S. Army War College, 21 March 1986). *and:* FM 100-15, C-4,5.

⁵⁷ FM 19-4, 105-108. *See also:* FM 100-15, C-2.

⁵⁸ FM 100-15, C-5. *See also:* Mouris, 1. *and:* FM 19-4.

⁵⁹ FM 19-4, 172, 181.

⁶⁰ John **Leighow**, "Route Clearance Operations", CTC Quarterly, (Jan 96), 2.

⁶¹ FM 100-15, C-4. See also FM 100-15-1, B-29. See also Thomas J. **Newman**, Rear Battle in the Future: Is our doctrine up to the task?, (Fort Leavenworth: SAMS, January 1993), 21.

⁶² FM 100-15-1, B-33. See also: FM 19-4, 100-101: FM 90-14, 3-21. and: Hansrote, 33-34, 43.

⁶³ FM 19-4, 181-188, 101-102.

⁶⁴ *Ibid*, 172.

A MP HMMWV carries a three soldier team. One soldier is needed to drive the vehicle and the other to man the machine gun. If the MPs were to be augmented with additional personnel, the "armored" HMMWV carries a maximum of four personnel.

⁶⁵ John G. **Rose**, "U.S. Army MPs about to Net Wheeled Armored Security Vehicles", Armed Forces Journal International, (July 1993), 13-14.

See also: Maureen **Cross**, Military Police School Point Paper: Armored Security Vehicle, (Fort McClellan: Military Police School, 11 July 1996), 1-2.

⁶⁶ **Cross**, 1-2. See also: Joe **Lepito**, Program Manager, ASV, (Fort McClellan: Military Police School).

and: Cadillac Gage Corporation, The ASV-150, Meeting security mission needs today and tomorrow, (New Orleans: Textron Marine and Land Systems, 1995).

⁶⁷ *Dismounts are soldiers who are not needed to drive the vehicle or operate the primary weapon system and are therefore able to "dismount" to conduct reconnaissance, collect prisoners, rescue wounded, man checkpoints or clear buildings. The requirements document for the ASV called for only room for 2 extra people. However the Air Force variant of the same vehicle will have room for six dismounts. The old V-150 on which the ASV is based had room for nine dismounts.*

⁶⁸ FM 100-15, C-5. See also: FM 100-15-1, B-31. and: FM 90-14, 3-2-3-5.

⁶⁹ FM 100-15-1, B 31. See also: FM 71-100, 1-15.

⁷⁰ Hansrote, 36. See also: Fm 100-15, C-5,6: FM 100-15-1. B 30-31. and: FM 71-100, 1-14-1-16.

⁷¹ FM 90-14, 3-23. See also FM 19-4, 105-108.

⁷² FM 100-5, 2-6, 2-13, 6-14-6-15. See also: Douglass B. **Blake**, "Brigade Rear Operations: A Force Protection Dilemma", CTC Quarterly, (4th Qtr 95), I-44-I-45.

⁷³ FM 100-15, 2-8. See also: FM 100-15-1, B-31.

⁷⁴ FM 100-15-1, B-31-B-32.

⁷⁵ Ibid, B-31.

⁷⁶ CALL, Operation uphold Democracy, Initial Impressions Report, Vol. II, D-20 to D+150, (Haiti AAR, II) (Fort Leavenworth: CALL Collection, April 1995), 5.

See also Mathew D. **Morton**, Balkan Report II: off the shelf Wheeled Armor Proves its Worth in Macedonian Winter", Armor, (July-August 1996), 7-10:

and: CALL, Initial Impressions Report, May 1996, Operation Joint Endeavor Bosnia-Herzegovina, Task Force Eagle Initial Operations (Bosnia AAR), (Fort Leavenworth: CALL Collection, May 1996), 35.

⁷⁷ *For example, while an M1A1 tank company has 14 tanks and no other tracked vehicles in its MTOE, when deployed it will have 1 M88 recovery vehicle, 2 M113 Medic/maintenance vehicles and 1 M901 FIST-V. If tasked organized with engineers it will have more M113s, plus M60 chassis breaching and bridging vehicles. Few of these vehicles can sustain cross country speeds of more than 20 mph or road speeds of more than 30. If the TCF contains its own artillery, they will have to drag around M109 howitzers, most of which cannot sustain 10 mph cross country.*

⁷⁸ K. L. **Boyd et al**, Wheeled Versus Tracked Vehicle Study, (Fort Monroe, VA: TRADOC, 31 March 1985), 1-73-1-79.

⁷⁹ CALL, **Haiti AAR, II**, pp. 1-5. See also: Kevin C. **Benson**, "Cavalry in Peacekeeping Operations," Armor, (Nov.-Dec. 1995), 15-17.

⁸⁰ Benson, 15.

⁸¹ CALL, Operation uphold Democracy, Initial Impressions Report, Vol. III, (Haiti AAR, III) Fort (Leavenworth: CALL Collection, July 1995), 117.

⁸² Benson, 15.

⁸³ CALL, Haiti AAR II, 10.

⁸⁴ CALL, U.S. Army Operations in Support of UNOSOM II, 2 May 93-31 Mar 94 (Somalia AAR), (Fort Leavenworth: CALL Collection, March 1994), I-4-2.

⁸⁵ Charles P. **Ferry**, "Mogadishu, October 1993: Personal Account of a Rifle Company XO," Infantry, (September-October, 1994), 22-31.

See also: Bolger, Savage Peace, 274, 311-350.

⁸⁶ Schneck, 7.

-
- ⁸⁷ Bolger, *Savage Peace*, 311, 314-318.
- ⁸⁸ *Ibid*, 314-330. *See also*: Ferry, 22-31.
- ⁸⁹ Somalia AAR, I-8-4. *See also*: Schneck, 30-36.
- ⁹⁰ Sinclair, 40.
- ⁹¹ *Monocoque - a one piece shell or hull without internal bracing. The shell provides its own rigidity. Its advantage lies in the fact that the force of an explosion will always seek the path of least resistance. The force of the explosion flows around the hull rather than penetrating through it.*
- ⁹² William Schneck, Telephone interviews by author, Fort Leavenworth, July-August 1996.
- ⁹³ Directorate of Combat Developments(DCD), Mounted Forces Role in OOTW, (Fort Knox: US Army Armor Center, 1995). (Briefing presented to CGSC Armor Officers September 1995), 16.
- ⁹⁴ DCD, 10. *This idea of the Tank serving as a "bullet magnet" and therefore helping the friendly dismounts is echoed by Zumbro from his experience in Vietnam. Zumbro, 8.*
- ⁹⁵ Sean B. **Maloney**, "Insights into Canadian Peacekeeping Doctrine", Military Review, (March-April 1996), 20-21.
See also: **Bosnia AAR**, xv.
- ⁹⁶ T.E. Putt (ed.), "**Mine Warfare** During Peace Support Operations," Dispatches, The Army's Lessons Learned Newsletter, (Canadian Army Land Force Command Headquarters, G3 Training Development, 7 April 1995), 13.
- ⁹⁷ Maloney, 21. *See also*: Putt, Mine Warfare, 14: Schneck, 43-44 and DCD, 23.
- ⁹⁸ Putt, Mine Warfare, 13.
- ⁹⁹ Mathew D. **Morton**, "Balkan Report II: Off the Shelf Wheeled Armor Proves its worth in Macedonian Winter," Armor, (July-August 1996), 7-10.
- ¹⁰⁰ Ronald D. **Reagan**, Observation Report 16919-26173 "Movement Control of JTF Units to Tactical Assembly Areas," Operation ATLANTIC Resolve 94, (Fort Leavenworth: CALL Collection, 1996).
See also: CALL, Combat Maneuver Training Center(CMTC) Trends, 1st/2nd Quarter, FY 95, (Fort Leavenworth: CALL Collection, 1996), II-15.

and: CALL, National Training Center Trends, 2nd Quarter, FY 95, (Fort Leavenworth: CALL Collection, 1996), II-23-II-24.

¹⁰¹ Linda G. **Burch**, Deficiencies in Current and Emerging Rear Battle Doctrine, (Carlisle: U.S. Army War College, 15 April 1985).

See also: Gregory M. **Eckert**, Command and Control of the Division Rear Battle, (Fort Leavenworth: SAMS, December, 1985):

and: R.E. **Gentilini**, The Rear Battle: A Maneuver Doctrine Dilemma, (Carlisle: U.S. Army War College, May 1986).

¹⁰² Hohnstine, II-8-II-11. See also Douglass B. **Blake**, I-43-I-44.

¹⁰³ Theodore **Blasche**, "Planning for Rear-Area Defense," Army Logistician, (November-December, 1988), 21-25.

See also: Geoffrey C. **DeTingo**, "Live-Fire Convoy Training in Hawaii", Army Logistician, (March-April 1996), 16-18.

and: Colonel Richard **Cadorette** (CSG Commander, Operation Desert Storm), E-mail interview by author, Fort Leavenworth, September-October 1996.

¹⁰⁴ *During exercise "Prairie Warrior" 1996 students attempting to exercise Company level Rear Area protection operations could not do so due to the nature of the CBS simulation on which the game was played. Because the simulation is focused on Corps and Division, it does not contain the algorithms to accurately depict engagements between units of less than battalion size. Simulations such as JANUS that do contain the required level of detail often do not play logistics. During Prairie Warrior if a company sized support unit made contact with a enemy combat unit it was always destroyed on the first turn. Units of battalion size or larger would last a little longer. There was no way for small units to use terrain or modify their tactics to gain an advantage.*

¹⁰⁵ *Despite the problems simulating small units operations during Prairie Warrior 1996, One of the major CSS observations was the need for a single rear commander and a robust, combat arms TCF. For more detail see: L.D. Holder and R.A. Dessert, Prairie Warrior: A Joint and Combined Exercise, Military Review, July-August 1996, pp. 5-10.*

¹⁰⁶ *The Army currently has large stocks of the M47 Dragon Medium Anti-Armor System which includes a thermal sight. The Dragon is currently being replaced in infantry units by the Javelin system. The Dragon was never considered an effective weapon against MBTs due to its small warhead, short range and long time of flight. However, the Dragon and in particular its; thermal sight would give a tremendous self defense capability to support troops who faced lesser threats and much closer ranges.*

¹⁰⁷ *The crew cab is sprung independently of the chassis and has a "V" shaped bottom. By adding shock absorbers to the cab springs and 3/8" steel plates to the bottom and sides of the cab, the driver and passenger would be protected from most mine blasts. The*

thick beams of the truck frame allow for the installation of a center line deflector to protect the engine and cargo bed.

¹⁰⁸ Liddy, 41.

¹⁰⁹ Brian R. **L**ayer, Some Principles of Convoy operations in OOTW, (Fort Leavenworth: SAMS, Jan 93), 17.

See also: DCD, 19-20: Mahoney, 20-21. and: Benson, 17.

¹¹⁰ FM 100-5, v.

¹¹¹ Summers, On Strategy II.

¹¹² Bolger, Ghosts of Omdurman.

BIBLIOGRAPHY:

- AAR -2BDE 10th MTN Division CELTIC CROSS IV, 2 October 1986. Fort Leavenworth: CALL Collection, 1996.
- "ASV Contract Awarded," Army. April 1996, 57.
- Exercise Director's Final Report, LOGEX 89, 31 January 1990. Fort Leavenworth: CALL Collection, 1996.
- Technical Report, Russian-U.S. Guide for TTP of Peacekeeping Forces During Conduct of Exercises. Fort Monroe: HQ, TRADOC, May 96.
- 24th Infantry Division(M) Light-Heavy Handbook, March 1993. Fort Leavenworth: CALL Collection, 1996.
- Appleman, Roy E., United States Army in the Korean War: South to the Naktong, North to the Yalu. Washington: Center for Military History, 1986.
- Arnold, James R. Tet Offensive 1968, Turning Point in Vietnam. London: Osprey, 1990.
- Belich, William A. Armor Utility in the Future. Carlisle, PA: U.S. Army War College, 5 April, 1991.
- Bennett, P. et al., Battle Analysis Rear Area Operations, First Marine Division, Oct 1950, Kojo, Korea. Fort Leavenworth: Combat Studies Institute, May 1984.
- Benson, Kevin C. "Cavalry in Peacekeeping Operations," Armor. November - December 1995, 15-17.
- Blake, Douglas B. "Brigade Rear Operations," CTC Quarterly Bulletin. (4Qtr FY 95 No. 90-11 Sep 95), I-43-I-47.
- Blasche, Theodore R. "Planning for Rear-Area Defense", Army Logistician. Nov.-DEC 1988, pp. 21-25.
- Bolger, Daniel. The Ghosts of Omdurman. 1991, Excerpt reprinted in US Army Command and General Staff College, The Evolution of Modern Warfare. Fort Leavenworth: USACGSC, 1995.
- Bolger, Daniel P. Savage Peace: Americans at War in the 1990s. Novato, CA: Presidio, 1995.

- Boyd, K.L. et al. Wheeled versus Tracked Vehicle Study. Fort Monroe, VA: U.S. Army Training and Doctrine Command, 31 Mar 85.
- Bradley, Clifford D. , "Wheels vs Tracks," Armor, May-June 1981, p.29-35.
- Burch, Linda G. Deficiencies in Current and Emerging Rear Battle Doctrine. Carlisle: U.S. Army War College, 15 April 1985.
- Cadillac Gage Corporation. The ASV-150, Meeting Security Mission Needs Today and Tomorrow. New Orleans: Textron Marine and Land Systems, 1995.
- Cadorete, Richard(CSG Commander, Desert Storm). E-mail Interview by author, Fort Leavenworth, September-October 1996.
- Caroll, Chip, "10 Steps to a better BSA Defense," CTC Quarterly, Jan 96, pp. 30-36.
- Center For Army Lessons Learned(CALL). CTC Trends, 1st/2nd Quarter, FY 95. Fort Leavenworth: CALL Collection, 1996.
- Center For Army Lessons Learned(CALL). CTC Trends, 2nd Quarter, FY 95. Fort Leavenworth: CALL Collection, 1996.
- Center For Army Lessons Learned(CALL). Initial Impressions Report, May 1996, Operation Joint Endeavor-Bosnia-Herzegovina, Task Force Eagle Initial Operations. Fort Leavenworth: Center for Army Lessons Learned, May 1996.
- Center For Army Lessons Learned, Operation Uphold Democracy Initial Impressions, Vol. II D-20-2+150. Fort Leavenworth: Center For Army Lessons Learned, April, 1995.
- Center For Army Lessons Learned, Operation Uphold Democracy Initial Impressions Report, Vol. III. (Haiti AAR III). Fort Leavenworth: CALL Collection, July 1995.
- Center For Army Lessons Learned, U.S. Army Operations in support of UNOSOM II, 4 May 93 - 31 Mar 94. Fort Leavenworth: CALL, March 1994.
- Combest, Michael L. Warfighting Doctrine for the Twenty-First Century: Close Quarters or Exceptional Force? Fort Leavenworth: SAMS, 4 Aug. 95.
- Conley, Donald. and Shun, Richard. "Vehicle Hardening Means Survival," Army Logistician, May-June 1995, p. 24-30.

- Crosbie, P.A. , Pay Now or Pay Later: An Analysis of Two Tactical Combat Force Locations. Fort Leavenworth: School of Advanced Military Studies(SAMS), 1986.
- Cross, Maureen. Military Police School Point Paper: Armored Security Vehicle. Fort McClellan: Military Police School, 11 July 1996.
- Danckert, Stephen C. "Detecting the Enemy: The Forgotten Element of Rear Operations", Army Logistician. Mar-APR 90, pp.38-40.
- DeGroat, Arthur S. and Nilsen David C. , "Information and Combat Power on the Force XXI Battlefield", Military Review. Nov.-DEC 95, pp. 56-62.
- Department of Logistics Resource Operations. Student Text 101-6, G1/G4 Battle Book. Fort Leavenworth: US Army Command and General Staff College(USACGSC), June 1995.
- DeTingo, Geoffrey C. "Live Fire Convoy Training in Hawaii", Army Logistician. March-April 1996, pp. 15-20.
- Directorate of Combat Developments, Mounted Forces Role in OOTW. Fort Knox: US Army Armor Center, 1995.(Presentation to CGSC Class 95-96 Armor Officers September 1995).
- Dunstan, Simon, Vietnam Tracks. Novato, California: Presidio Publishing, 1982.
- Eckert, Gregory M. , Command and Control of the Division Rear Battle. Fort Leavenworth: School of Advanced Military Studies(SAMS), DEC 1985.
- Elsmore, Robert A. "BSA Defense in CAMP HAITIAN", Army Logistician. Sep-Oct 95, pp. 12-13.
- Fall, Bernard B. , Street Without Joy. New York: Schoken Books, 1964.
- Ferry, Charles p. "Mogadishu, October 1993: Personal Account of a Rifle Company XO," Infantry. September-October 1994, pp. 22-31.
- Geburt, T.K.D., Operation Cavalier - End Tour Report. 2nd Battalion, Royal Canadian Regiment, 4 June 1993, Fort Leavenworth: CALL Collection, 1996.
- Gentilini, R.E. The Rear Battle: A Maneuver Doctrine Dilemma. Carlisle: U.S. Army War College, May 86.
- Gonsalez, Rene, Vehicle Hardening and Convoy Operations(AAR). Fort Eustis, VA: U.S. Army Transportation School, July 1994.

- Groshev, "Combined Arms Battle: The Anti Landing Reserve", Voyennyy Vestnik (Military Herald), May 1986, pp. 66-72.
- Haas, Peter M. , "Palletized Loading System: Not Just another truck", Army Logistician. Sep-Oct 95, pp. 14-18.
- Hansrote, C. , Rear Operations Doctrinal Overview. (Briefing Slides), Fort Leavenworth: Corps and Division Doctrine Directorate, Command and General Staff College, May 1996.
- Heilbrunn, Otto., Warfare in the Enemy's Rear. London: Prager Publishing, 1963.
- Herbert, Paul H. Leavenworth Paper Number 16, Deciding What Has to be Done: General Dupuy and the 1976 edition of FM 100-5, Operations. Washington: US Government Printing Office, 1988.
- Heredia, Michael D. After the Covering Force Fight, Then What?, The Armored Cavalry Regiment in the Corps Defensive Rear Battle. Fort Leavenworth: SAMS March 1988.
- Hoffman, Bruce , Commando Raids: 1946-1983, Santa Monica: Rand Corporation, 1985.
- Hohnstine, Lyle, "Combat Training Centers: The 21st Century School for Application of Military Art and Science", CTC Quarterly. Jan. 96, pp. II-8 -II-11
- Jacobs, Bradley M., Float Like a Butterfly, Sting like a Bee. Middleweight units and the U.S.Army. Newport: Naval War College, 05 May 1995.
- Kirkland, Faris R. (et al)., "The Human Dimension of Force Projection: Discipline under fire", Military Review. March-April 1996, pp 57-64.
- Krepinevich, Andrew F. , The Army and Vietnam. Baltimore: Johns Hopkins University Press, 1986.
- Kurkotkin, S, HSU, "Rear Services Support of the Troops", Moscow VOYENNO-ISOTORICEHSKEY ZHURNAL. No 12, DEC 81, pp. 60-66.
- LaGrange, Gary L., An Obscure Battle. Carlisle: US Army War College, Feb. 1987.
- Lauer, Donald M. , "Theater Logistics- A Combat Multiplier", Army Logistician. NOV.-DEC 92, pp. 16-17.

- Layer, Brian R. , Some Principles of Convoy Operations in Operations Other Than War, Fort Leavenworth: SAMS, Jan 93.
- Leighow, John., "Route Clearance Operations", CTC Quarterly, Jan 96, pp. 1-17.
- Lepito, Joe, (Project Manager for ASV in Fort McClellan). Telephone interview, August 1996.
- Liddy, Martin A. Alternative Multinational Force Capabilities for OOTW. Alexandria, VA: Institute for Defense Analysis, 1995.
- Littel, Mark A. , The Light Armored Cavalry Regiment: Reconnaissance Force for the Future, Fort Leavenworth: SAMS, January 1993.
- Lougher-Goodey, Col. M.D. et al., Mine Clearance Operations Evaluation Study, J3 Engineer, Canadian Armed Forces deployed to Bosnia, Jan 96.
- Maders and I. Khanin, "Protection , Security and Defense of Truck Columns", Rear and Supply of the Soviet Armed Forces, Jan. 1983, translated by Foreign Science and Technology Center, Charlottesville, Va., pp. 37-41.
- Maloney, Sean B. "Insights into Canadian Peacekeeping Doctrine", Military Review, Mar-APR 1996, pp. 12-23.
- Marshall, S.L.A., The River and the Gauntlet, Nashville: The Battery Press, 1987.
- Mao Tse-Tung, On Guerrilla Warfare, Translated by Samuel B. Griffith, New York: Praeger Publishing, 1961.
- Matz, William M. et al., "Rear Operations in the Light Division", Military Review, June 1989, pp. 2-13.
- McMichael, Scott R. A Historical Perspective on Light Infantry, Fort Leavenworth: Combat Studies Institute, Nov. 1987.
- Moore, T.D. Rear Operations During the Offense: How Capable is the Corps of Conducting Rear Security Operations During the Attack? Fort Leavenworth: SAMS, Jan 90.
- Mornston, Harry., The emerging National Military Strategy of Power Projection and the Army's Contingency Corps. Fort Leavenworth: USACGSOC, MMAS, 1991.
- Morton, Mathew D. "Balkan Report II: Off the shelf wheeled Armor Proves its

- Worth in Macedonian Winter", Armor. July-August 1996., pp. 7-10.
- Moulton, Richard D. Rear Area Commander's Responsibility. Carlisle: U.S. Army War College, 26 May 1985.
- Mouris, Paul C. , Rear Area Combat Operations and Prisoner of War Operations: Can We Do Both? Carlisle Barracks: U.S. Army War College, 21 March 1986.
- Newman, Thomas J. Rear Battle in the Future: Is our doctrine up to the Task? Fort Leavenworth: SAMS, Jan 93.
- Nobles, David L. "The Light Armored Force: An Urgent Need, A Ready Solution," Armor. May-June 1990. pp. 8-13.
- Odintsov and Colonel V. Ovsyannikov, "Soviet Military Art in the Great Patriotic War: Rear Support for Mobile Groups," Printed in: Moscow- VOYENNO-ISTORICHESKEY ZHURNAL. No. 3 March 1983.
- Ogorkiewitz, R.M., "Commando V-600, Clever use of Existing Components," International Defense Review. Vol. 22 DEC 89 pp. 1559.
- Ortiz, Robert, "Military Police Observations and Trends", NTC Bronco Observation. 1992, Fort Leavenworth: CALL Collection, 1996.
- Pal, Krishan (et al)., Battle Analysis, Yongsan, Rear Area Operations(24th ID 11-13 August 1950). Fort Leavenworth: Combat Studies Institute, US Army Command and General Staff College(USACGSC), May 1984.
- Pengelley, Rupert, "Main Armament Systems for Wheeled Gun-Vehicles", International Defense Review. 10/1989, pp. 1355-1362.
- Pike, Douglass., PAVN: People's Army of Vietnam. Novato: Presidio Press, 1986.
- Pilyugin, Yu. , "Security of Land Lines of Communications in the Course of the War", Moscow VOYENNO-ISTORICHESDIY ZHURNAL. No. 9, Sep 83 pp. 31-36.
- Pleasant, James, et al., 54th Rear Area Operations Center Standing Operations Procedures, 1 APR 1986. (Fort Leavenworth: CALL Collection, 1996).
- Prueitt, Iris, et al., Light Cavalry Regiment Evaluation. Fort Leavenworth: TRADOC Analysis Command Operations Analysis Center, 1993
- Putt, T.E. (ed), "Convoy Operations," Dispatches, The Army's Lessons learned Newsletter. Canadian Army Land Force Command Headquarters, G3 Training Development, 7. Nov. 94.

- Putt, T.E. (ed), "Mine Warfare During Peace Support Operations," Dispatches, The Army's Lessons learned Newsletter. Canadian Army Land Force Command Headquarters, G3 Training Development 7, April 95.
- Reagan, Ronald, D., Observation Report 16919-26173 "Movement Control of JTF units to Tactical Assembly Areas." Operation ATLANTIC RESOLVE 94, Fort Leavenworth: Center For Army Lessons Learned Data Base, 1996.
- Romjue, John L., The Army of Excellence: The Development of the 1980's Army. Fort Monroe, VA: Office of the Command Historian, U.S. Army Training and Doctrine Command, 1993.
- Rose, John G. "U.S. Army MPs About to Net Wheeled Armored Security Vehicles", Armed Forces Journal International. July 93. pp. 13-14.
- Rozman, Thomas R. "Thoughts on Medium or Motorized Forces," Infantry. JAN-FEB. 91., pp. 22-26.
- Salmon, B.E. Raiding Logistics: The low cost alternative to fighting fair. Newport: Naval War College, 8 Feb. 94.
- Saunders, James L. Rear Operations: Protecting Points of Decision. Fort Leavenworth: SAMS, Jan 87.
- Schneck, William C. , AAR Restore Hope. Fort Belvoir, VA: Countermining Systems Directorate, U.S. Army Belvoir Research, Development and Engineering Center, 1994.
- Schneck, William C. Telephone Interviews by author, July-August 1996.
- Schoch, Bruce P. "Tactics of Desperation", Army Logistician. May-June 1980, pp. 16-19
- Shufelt, James W. Mobile Firepower for Contingency Operations: Emerging Concepts for U.S. Army Light Armor Forces. Fort Leavenworth: School of Advanced Military Studies, Feb. 93.
- Sinclair, Wayne A. "Answering the Landmine", Marine Corps Gazette. July 1996., pp.37-40.
- Snell, Wilmer D. Rear Battle Doctrine a time for Change. Maxwell AFB, Alabama: Air War College, Air University, March 1989.

- Spencer, Robert, et al., Air Ground Motorized Cavalry Evaluation Final Report. Fort Leavenworth: TRADOC Analysis Command Operations Center, Combined Arms Analysis Directorate, June 92.
- Stephenson, John W. "Using Rear-area Operations Centers in Rear Battle", Army Logistician. Sep-Oct 90, pp. 18-20.
- Starry, Donn A. , Mounted Combat in Vietnam. Washington: Department of the Army, 1977.
- Stiff, Peter , Taming the Landmine. Alberton, RSA: Galago Press, 1986.
- Summers, Harry, On Strategy: The Vietnam War In Context. Carlisle: Strategic Studies Institute, US Army War College, 1981.
- Summers, Harry. On Strategy II: A Critical Analysis of the Gulf War. New York: Dell Publishing, 1992.
- Terry, T.W. et al., Fighting Vehicles. London: Brassey's, 1991.
- Thompson, Julian., The Lifeblood of War. London: Brassey's, 1991.
- Tretyakov, Yu. "Combat Training in an airborne antilanding Reserve", Soviet Military Review. #7, July 1984, pp. 28-30.
- Turbe, Gerard, "France's Light Armored Cavalry", International Defense Review. Vol. 22 DEC 89
- U.S. Army Training and Doctrine Command, Operational Requirement Document for the Armored Security Vehicle. Fort Monroe: TRADOC, 2 APR 92.
- U.S. Army Training and Doctrine Command. TRADOC PAM 525-5, Force XXI Operations. Fort Monroe: TRADOC, 1 August 1994.
- U.S. Army Transportation School, Fort Eustis, Virginia, Vehicle Hardening and Convoy Operations 31 July 1994. Fort Leavenworth: CALL Collection, 1996.
- U.S. Department of the Army, Army Training and Evaluation Plan(ARTEP) 10-427-30 MTP, Mission Training Plan For Petroleum Supply Company. Washington: Government Printing Office, Sep 93.
- U.S. Department of the Army, ARTEP 11-067-30-MTP, Mission Training Plan For Companies and Platoons of Division Signal Battalions(MSE). Washington: Government Printing Office, Nov. 90.

- U.S. Department of the Army, DA PAM 20-240, Historical Study: Rear Area Security in Russia: The Soviet Second Front Behind German Lines. Washington: Government Printing Office, July 1951
- U.S. Department of the Army. DA PAM 25-30, Consolidated Index of Army Publications and Blank Forms. Washington: Government Printing Office, 1 July 1996.
- U.S. Department of the Army FC 17-101 The Light Cavalry Troop. Fort Knox: Armor School, Sept 1985.
- U.S. Department of the Army. FKSM 17-97 Coordinating Draft #2, TTP for Bde Reconnaissance Troop. Fort Knox: June 1996.
- U.S. Department of the Army, FM 7-98, Operations in A Low-Intensity Conflict. Washington: Government Printing Office, Oct 92.
- U.S. Department of the Army, FM 11-30, MSE Guide for Commanders. Washington: Government Printing Office, 27 Feb. 91.
- U.S. Department of the Army FM 11-37, MSE Operations. Washington: Government Printing Office, Nov. 1990.
- U.S. Department of the Army. FM 11-50, Combat Communications within the Heavy Division. Washington: Government Printing Office, April 1991.
- U.S. Department of the Army, FM 17-18-Light Armor Operations. Washington: Government Printing Office, 8 March 1994.
- U.S. Department of the Army, FM 17-95-Cavalry Operations. Washington: Government Printing Office, Sept 91.
- U.S. Department of the Army FM 17-95-10 The Armored Cavalry Regiment and Squadron. Washington: Government Printing Office, Sept 93
- U.S. Department of the Army, FM 19-4 Military Police Battlefield circulation Control, Area Security and EPW Operations. Washington: Government Printing Office, May 1993.
- U.S. Department of the Army, FM 44-18C1, Air Defense Artillery Employment Stinger. Washington: Government Printing Office, May 1985.
- U.S. Department of the Army FM 71-100, Division Operations. Washington: Government Printing Office, June 1990.

- U.S. Department of the Army FM 90-8 Counterguerrilla Operations. Washington: Government Printing Office, Aug. 86.
- U.S. Department of the Army, FM 90-10-Military Operations on Urbanized Terrain. Washington: Government Printing Office, August 1979,
- U.S. Department of the Army, FM 90-14-Rear Battle. Washington: Government Printing Office, June 1985
- U.S. Department of the Army, FM 90-23-Rear Security Operations for Echelons above Corps. Washington: Government Printing Office, Nov. 1989.
- U.S. Department of the Army, FM 100-5, Operations. Washington: Government Printing Office, June 1993.
- U.S. Department of the Army, FM 100-10 Combat Service Support. Washington: Government Printing Office, Feb. 1988
- U.S. Department of the Army FM 100-15 Corps Operations. Washington: Government Printing Office, June 1996.
- U.S. Department of the Army, FM 100-15-1 Corps Operations TTP. (Initial Draft), Fort Leavenworth: Corps and Division Doctrine Directorate, Command and General Staff College, June 1996.
- U.S. Department of the Army FM 100-16, Army Operational Support. Washington: Government Printing Office, 4 April 1994.
- U.S. Department of the Army, FM 100-20 Military Operations in Low Intensity Conflict. Washington: Government Printing Office, Dec. 1990
- U.S. Department of the Army, FM 100-123 Peace Operations. Washington: Government Printing Office, DEC 1994.
- U.S. Department of the Army. FM 101-5-1, Operational Terms and Graphics(Final Draft). Washington: Government Printing Office, 15 July 1995.
- U.S. Department of the Army, Modified Table of Organization and Equipment(MTOE) 09483L000, Ordnance Company Ammunition DS MOADS. Washington: Government Printing Office, 4/11/93.
- U.S. Department of the Army, MTOE11067L200, Area Support Company, Signal Battalion(MSE). Washington: Government Printing Office, 4/11/93.

U.S. Department of the Army, MTOE 55718L200, TMT, (Light). Washington: Government Printing Office, 4/11/93.

U.S. Department of the Army, MTOE 55727LL200 TMT (Medium) Petroleum, Oil and Lubricants(POL). Washington: Government Printing Office, 4/11/93.

U.S. Department of the Army, MTOE 55728L28L300, Transportation Motor Truck(TMT) Palletized Loading System(PLS). Washington: Government Printing Office, 4/11/93.

Vowels and Witsken, "Peace Keeping With Light Cavalry," Armor. Sep-Oct 1994, pp. 26-30.

Williams, Mark, Trip Report 1st COSCOM Logistics in OOTW VTC, 4 mar 94. Fort Leavenworth: CALL Collection, 1996.

Wheldon, C.B. Light Cavalry: Strategic Force for the Future. Carlisle Barracks: U.S. Army War College, Jan 92.

Womack, Scott, "The AGS in Low-Intensity Conflict: Flexibility is the key to victory", Armor. Mar-April 94., pp. 42-44.

Ziemke, Earl, The Soviet Partisan Movement in 1941. HQ US Air Force: Air Research and Development Command, December 1954.

Zumbro, Ralph , Tank Sergeant. Novato, CA: Presidio Press, 1986

Appendix I, Attacks against Rear Area troops during Mid Intensity Conflict in Korea and High Intensity Conflict in Russia during WW II.

On the Eastern Front in WW II the Soviets conducted a massive campaign against German rear area troops. They cut LOCs, attacked isolated units, encouraged resistance by the local populace and collected intelligence for the front line units. While not decisive by itself, it was an important component of final victory.ⁱ The Soviets were particularly adept at synchronizing large scale partisan attacks with close combat forces attacks along the front lines. The Germans often found their supply lines and communications cut and their forward air fields under assault just when they needed them the most. This partisan movement was facilitated by the initial rapid German advances during the first year of the war. The German armored spearheads bypassed huge number of Soviet troops during their battles of encirclement. While most of these troops became POWs, thousands disappeared with their small arms into the forests and swamps of Byelorussia.ⁱⁱ The German combat units move east, but their support troops had to operate in these vast areas between Poland and the front. These support troops faced a situation that was very similar to the guerrilla warfare described earlier. They were subject to mines, snipers, ambush and raids. They could never tell when the seemingly friendly population would rise up and strike at them. The Germans were forced to commit large numbers of front line troops to conduct anti-partisan campaigns. Yet these anti-partisan sweeps were seldom successful. The anti-partisan struggle was so brutal that some German combat divisions detailed to suppress the partisans asked to be returned to the front lines rather than endure the anti-partisan fight.ⁱⁱⁱ

Although much less published than the Soviet rear partisan movement, the Germans also conducted attacks in the Soviet rear areas. These operations became more widespread as the Germans retreated west into areas that were hostile to the Soviet Regime such as Ukraine, the Baltic's, Poland and Germany itself. The Germans attempted to compensate for their lack of close combat power late in the war by attacking Soviet LOCs. They used the same techniques of mines, snipers, raids and ambush that the Soviets had inflicted upon them. In both of these situations, one side made up for its lack of close combat power by attacking its enemy's rear area. These attacks attempted to choke the logistic lifeline that the enemy's superior forces depended upon.^{iv}

In Korea, North Korean and Chinese forces took advantage of the rough terrain and lack of a continuous front to infiltrate light infantry forces behind the UN combat units. These light infantry then attacked rear area units that were much more vulnerable to the Communist's light infantry weapons and were more critical than individual infantry units to the overall defense. The enemy's targets were artillery units, logistics units and headquarters and convoys moving along the lines of communication(LOCs).^v They conducted raids, planted mines, erected road blocks and ambushed convoys. These attacks were sometimes successfully countered by ad hoc forces thrown together from CS and CSS units. However, in countering these threats the support units suffered heavy casualties and ceased to support the forward forces.^{vi} The enemy often combined attacks along the FLOT with strikes in the rear area. UN troops were often surrounded by enemy units that had infiltrated past their positions and then cut their supply lines to the rear. Denied ammunition and other supplies the UN forces were compelled to fall back through a gauntlet of enemy ambushes and roadblocks.^{vii} Support units were particularly

vulnerable to having their wheeled or unarmored vehicles disabled by small arms. Once the vehicle was disabled it stranded the crew and blocked the route for other vehicles. In contrast tanks and other armored vehicles had much fewer problems with the ambushes and roadblocks. Their armor allowed them to keep moving in the face of enemy fire. Their protected machine guns allowed them to suppress the enemy and their mass allowed them to push through most road blocks.^{viii}

Notes to Appendix I:

ⁱ U.S. Department of the Army, DA PAM 20-240, Historical Study: Rear Area Security in Russia: The Soviet Second Front Behind German Lines, (Washington: Government Printing Office, July 1951).

ⁱⁱ Earl Ziemke, The Soviet Partisan Movement in 1941. HQ US Air Force: Air Research and Development Command, DEC 1954, p. 25.

ⁱⁱⁱ DA PAM 20-240, p. 34.

^{iv} Pilyugin, p. 29.

^v Pal, pp. 4-2-4-6. Appleman, p. 137

^{vi} Pal, p. 4-7.

^{vii} Pal, pp. 4-4-4-6, *See also*: S.L.A. Marshall, The River and the Gauntlet, 1953. (Nashville: The Battery Press, 1987), pp. 280-290..

^{viii} Marshall, pp. 291-295.